

103

NUCLEAR WASTE DISPOSAL

Y 4. EN 2/3:103-137

Nuclear Waste Disposal, Serial No....

HEARING
BEFORE THE
SUBCOMMITTEE ON
ENERGY AND POWER
OF THE
COMMITTEE ON
ENERGY AND COMMERCE
HOUSE OF REPRESENTATIVES
ONE HUNDRED THIRD CONGRESS
SECOND SESSION

—
AUGUST 3, 1994
—

Serial No. 103-137

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Printed for the use of the Committee on Energy and Commerce



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NUCLEAR WASTE DISPOSAL

WEDNESDAY, AUGUST 3, 1994

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON ENERGY AND POWER,
Washington, DC.

Mr. SHARP. The subcommittee will please come to order.

This morning we are going to have a further hearing on oversight of how this country hopes to permanently dispose of its nuclear waste fuel. We have fuel from civilian reactors, 118, that are either operating now or have operated. We have it stored at 73 sites around the country and 34 States and we have under way a program to try to characterize and decide whether or not we have an appropriate deep geologic permanent site for that storage in the State of Nevada and this morning we are going to examine some of those issues.

I think the overwhelming thing that we need to keep in mind is that no matter where an individual stands on the issue of the future of nuclear power, we have an obligation now and in the future to dispose of a very large quantity of nuclear waste and it behooves this country to find the common interest and the common understanding that we all have a major stake in this and do the best we can to remove this issue of nuclear waste from the broader issue of the future of nuclear fuel and electricity generated from nuclear power.

The Chair wants to apologize for the committee room that we were assigned to. We are never able to anticipate. We are never able to get the rooms we want, first of all. But we are never able to anticipate what the crowd will be like and as someone in our audience said, this is a classic case of reracking.

The Chair now wants to recognize the distinguished Ranking Minority Member, Mr. Bilirakis from Florida.

Mr. BILIRAKIS. Thank you, Mr. Chairman.

I just left a meeting on health care, to go from health to nuclear waste. I guess in a way they are related.

Mr. Chairman, I certainly appreciate your having this hearing and I am sure you agree with me that no matter how we feel about nuclear power, this is an issue that has to be addressed. The unfortunate thing is, there is an awful lot of rhetoric up here—present company excepted—an awful lot of rhetoric here on this subject and it just doesn't go anywhere. That is a shame.

As you know and we all know, more than \$346 million has been paid into the fund created by Congress and this is by the ratepayers of Florida's two nuclear utilities alone; more than \$8 billion

over the years from all utility ratepayers. So the balance stands at \$4.4 billion.

This is paid by our ratepayers, Mr. Chairman; nobody else. It is by the same people that we represent, so it is critical that we do something about this subject.

I had the pleasure of visiting the site in Nevada. I am not sure that it is in your district, Jim, but just north of your district, I think. I understand that there has been hardly any progress and this was, oh, close to a year ago.

I understand there has been hardly any progress since then. That is what I am told. That is a darn shame and I am not sure what the reasons are. But we have to make decisions in this Congress and we have to go forward with those decisions and there are lawsuits that have been filed by, I understand, as many as 20 States.

I know my State of Florida is one and we are going to get in deeper and deeper as far as this subject is concerned.

So Mr. Chairman, I hope that we don't just waste our time and the time of all these good people out here just with rhetoric and no action to follow it. Thank you so much and I have a formal statement that I would like to put in the record.

Mr. SHARP. That will be made part of the record.

[The prepared statement of Mr. Bilirakis follows:]

STATEMENT OF HON. MICHAEL BILIRAKIS

Mr. Chairman, the issue of permanent disposal of spent nuclear fuel has been with us since the Carter administration. At that time, and after an exhaustive, inter-agency review, the nuclear waste program was initiated. Since then, it has enjoyed bipartisan support in the Congress.

The Nuclear Waste Policy Act of 1982 charged the Federal Government with ensuring that spent nuclear fuel from the generation of electricity was disposed of in a safe, environmentally sound, cost-effective and *timely* manner.

In the very next year, the two nuclear utilities in my State of Florida entered into contracts with the Department of Energy accepting the terms of this legislation.

Among other items, the act created a timetable for siting, licensing and constructing a geologic repository for the disposal of spent nuclear fuel generated by our Nation's nuclear energy plants. The nuclear utilities' obligation under the act—and the subsequent contracts signed pursuant to it—was to collect a one mill per kilowatt/hour fee from ratepayers to fund the repository. DOE's obligation was to have the repository ready by the end of January 1998.

To date, more than \$346 million has been paid into this fund by the ratepayers of Florida's two nuclear utilities alone—and more than \$8 billion has been collected over the years from all utility ratepayers. Currently, the fund's balance stands at \$4.4 billion.

Mr. Chairman, these ratepayers—our constituents—continue to pay into this fund, yet DOE recently has conceded that the 1998 deadline for the acceptance of spent nuclear fuel cannot be met. DOE claims the repository will not be ready until at least the year 2010—and I fear that even that is an optimistic estimate.

While 2010 may seem far away from us today, I assure everyone that where radioactive materials are concerned, it is merely the blink of an eye. For many utilities, currently storing spent nuclear fuel on-site in what were designed to be temporary cooling pools, even 1998 will come far too soon. Twenty-three reactors will run out of on-site storage space in 1998. In 2010, another 55 reactors will join them. What then?

Gradually, our constituents across this Nation will join the ratepayers in Minnesota who are now forced to pay not only the millage fee, but additional on-site storage space costs as well.

Many utilities and public service commissions are not willing to accept that, Mr. Chairman. In fact, in response to unclear signals from DOE about its obligation under the NWPAA to accept spent nuclear fuel, two lawsuits have been filed against the Department of Energy in the U.S. Court of Appeals for the DC. Circuit.

The first was brought by a group of 20 States—including Florida—and has since been joined by three more States and over 10 cities and agencies. The second suit was filed by a number of specific utilities, and their purpose is to make clear DOE'S obligation under the NWPA.

The Department of Energy claims it cannot accept waste from U.S. reactors, yet, in May of this year, DOE announced that it would accept spent fuel assemblies from foreign research reactors, lest they be forced to shut down prematurely. We will accept foreign fuel, but we cannot find the means of dealing with our own.

This is wrong, Mr. Chairman, it is not responsible government and it is time to do the right thing. We must find the means and the political will to solve this ongoing problem. If we stopped nuclear energy generation tomorrow, we would still have a problem—we would still have the spent nuclear fuel in those storage pools across the Nation. Regardless of how we feel about it, it must be addressed: it isn't going to go away and we can't close our eyes to this issue any longer.

Thank you, Mr. Chairman.

Mr. SHARP. We are very pleased to have on our first panel two distinguished public servants from the State of Nevada, the distinguished Senator Bryan and Representative Bilbray.

Senator Bryan, we will be delighted to hear your oral summary. We will, of course, make your full text a part of our record.

Mr. BILBRAY. He is much older than I am, so I prefer he goes first.

Mr. SHARP. Certainly from a House colleague, I would be forced to agree under the rules of comity that the upper chamber is always different.

STATEMENT OF HON. RICHARD BRYAN, A U.S. SENATOR FROM THE STATE OF NEVADA

Senator BRYAN. Mr. Chairman, I appreciate the courtesy that my younger friend and colleague in the other body here accords me.

Let me come to the point and first of all acknowledge and appreciate your courtesy in extending me an invitation to be here today, Mr. Chairman. I do appreciate that very much. It is an interest that I have and have had for more than a decade. I think every Member of Congress can understand the concern that one would have representing the State of Nevada.

First, to conclude that in my judgment the United States nuclear waste program is a failure. It has generated nothing but distrust and cynicism in my own State. For more than a decade now, the Department of Energy has pursued a nuclear waste policy that is a litany of poor judgment, politics overwhelming science, and broken promises—all too often at the expense of people of the State of Nevada.

My years of experience in dealing with this issue—and it dates back more than a decade, Mr. Chairman and Congressman Bili-rakis—is it made it painfully clear that good public policy, sound science, or the health and the welfare of the public have very little to do with the goals of this program. The Department of Energy's nuclear waste program is a moving target with little direction, shifting course often, and only responsive to the direction and advice of the nuclear waste industry.

When the geologists report a problem such as a new fault, the DOE simply changes the design of the repository until another fault is found.

When the General Accounting Office criticizes the finances of the project, the Department of Energy seeks to take the funding off budget.

When the industry and the Department of Energy realize they cannot meet the health and safety standards established to protect the public, the standards are attacked and efforts are made to reduce them or to change them in some fashion.

When both the GAO and the Technical Review Board called for an independent review of the Department of Energy's policies, the Department of Energy refuses to even consider the request, and simply stonewalls the advice of independent professionals.

When the people of Nevada say we refuse to be the Nation's dumping ground for nuclear waste, the Department of Energy simply ignores the will of the people in Nevada and says well, that is too bad.

Mr. Chairman, the nuclear industry has created an atmosphere of crisis which has led many to believe that a calamity will befall us should the next Congress fail to act to amend the Nuclear Waste Policy Act. While I do not believe that such a crisis really exists, I have no doubt that there will be an effort to reopen the Act in the next session of the Congress. And while it is unclear what direction these changes will take, I wanted to take this opportunity that you have afforded me to make my position on a few of the changes that were rumored to be considered.

First, there can be no changes to one of the very few protections left to the State of Nevada, the provision of current law which prevents the Department of Energy from locating an MRS or a temporary dump in a State being characterized for permanent repository.

Similarly, removing the current prohibition against siting an MRS before a permanent repository is licensed is unacceptable. Placement of a temporary dump in Nevada will make any of the other protections offered by the Nuclear Waste Policy Act moot.

Any early placement of waste to Nevada would seriously compromise the already inadequate characterization that has occurred at Yucca Mountain and even worse, Mr. Chairman, there is little doubt in my mind that there if there is to be a temporary storage dump in Nevada, that will become de facto, be the permanent dump. Such an action would place Nevadans' personal health and safety at risk to solve the nuclear waste's industry problem, a problem, Mr. Chairman, that Nevada has not created.

Second, any attempt to degrade or reduce the health and safety standards incorporated into the current Act is also unacceptable. For the Federal Government to break a promise as fundamental as enforcing high health and safety standards is unthinkable. To do so simply to reduce the cost and difficulty of solving the nuclear industry's waste problem is in my judgment immoral.

The concern for lowering the standards for a repository are not groundless. This subcommittee will recall during the processing of the 1992 energy bill, the end result of a last-minute amendment offered in conference in which there was not a single word of testimony, no opportunity to amend or to debate it other than in the context of a conference report, which this committee fully understands is unamendable, is in my view a shameful performance by Congress and terribly unfair to the policy of reasonable debate and terribly unfair to the people of the State of Nevada.

These standards, as you know, are now in the hands of the National Academy of Science where I hope they will be treated in a scientific rather than a political context.

Whatever the outcome of the Academy's deliberations, I don't doubt for a moment that the nuclear industry will once again attempt to compromise and to reduce those standards.

Mr. Chairman, Nevadans have much to be offended by in the current nuclear industry and the Department of Energy's—the Department of Energy's strategy in trying to sell Nevada on the nuclear waste dump. Millions have been spent in terms of propaganda efforts. The politics of nuclear power industry had a profound impact in my own State.

I must say that the propaganda campaign has often been filled with misrepresentation, half truths, misinformation, and in some instances pure dishonesty. But the Department of Energy even seeks to indoctrinate Nevada's school children with their relentless programs on so-called education in Nevada's schools which is a biased, one-sided presentation.

Throughout this process, Congress and the Department of Energy have repeatedly changed the rules and standards to fit the situation that they were finding at Yucca Mountain of the scientific health and safety see standards that in my judgment should not be lowered. The simple fact is that those who are most familiar with the program and who were not under the influence of the nuclear industry recognize that Yucca Mountain is not a suitable site.

Now, I am not under any delusions that this is an industry that has enormous political and financial muscle and it has significant influence in the Department of Energy and in Congress. And I don't doubt the next Congress would be pivotal in the direction of nuclear waste policy. I expect to be back next year, Mr. Chairman, and I will continue to use any and all resources at my disposal to oppose any changes in the nuclear waste program which are a continuation of misguided and haphazard policies of the past and which do not include fresh solutions which protect the public and place the responsibility and burden for the disposal of nuclear waste where it belongs with the industry itself.

I thank you very much, Mr. Chairman, and I am happy to respond to any questions you or Congressman Bilirakis have after Congressman Bilbray testifies.

Mr. SHARP. Thank you.

Representative Bilbray, we would be very pleased to hear from you.

STATEMENT OF HON. JAMES H. BILBRAY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Mr. BILBRAY. Thank you very much and I appreciate it, Mr. Chairman and Mr. Bilirakis.

Mr. SHARP. We have a colleague, Mr. Hastert, here as well. He didn't get a chance to make an opening statement.

Mr. BILBRAY. Mr. Chairman, thank you for allowing me to testify today.

As you know, Mr. Chairman, Yucca Mountain, as Mr. Bilirakis has stated, is approximately 75 miles northwest of Las Vegas and the First District, which I represent, but most of the people that

I represent do work at the Nevada test site in close proximity to that area and my people in southern Nevada are very, very concerned.

For the last 7 years, few issues in southern Nevada have raised more controversy and concern than the Department of Energy's effort to study Yucca Mountain to determine its suitability as a permanent high level nuclear waste repository.

Public criticism of this program remains high, especially in southern Nevada, and as Senator Bryan said, in spite of a multi-million dollar lobbying campaign orchestrated and funded by the nuclear utilities industry to improve the "image" of Yucca Mountain.

I want to take this opportunity to share with the committee some of my thoughts as to why the public and also so many Members of Congress remain so cynical toward the high-level waste program. I also want to explain why I feel that DOE is currently headed in the wrong direction to reverse the trend of mounting public and Congressional criticism of this program.

First, the DOE and the nuclear utilities industry are correct in their belief that they must have public support in order to establish a successful high-level nuclear waste program. Spending millions of dollars on television commercials and other public relations gimmicks, however, is not going to improve the public's perception of either of the DOE or the nuclear industry. To the contrary, it is credibility that is the touchstone for the DOE's success in the nuclear waste program.

In order to garner the support of southern Nevadans and the public at large, DOE must improve its credibility through exemplary science and management, not radio and television ads sponsored by the nuclear industry. I must say that I am encouraged by the work and efforts of Secretary O'Leary to address the credibility crisis facing the DOE. It is clear that she has a long and difficult path ahead of her. Her recent decision to open the DOE files regarding human radiation experimentation is clear evidence that she is in the right path, but the revelations themselves has further eroded public trust in an agency already plagued with credibility problems.

In regard to Yucca Mountain, science must no longer take a back seat to unrealistic deadlines if a credible nuclear waste program is to be developed. As Bob Loux will discuss with you later, the piecemeal destruction of the original Nuclear Waste Policy Act of 1982 to accommodate DOE's management problems and serious geological problems at Yucca Mountain is clearly not the best way to build credibility within the DOE, let alone provide for the health and safety of the American public.

New proposals by the DOE to take the program off budget and to revise EPA's standards protecting public health are clear indications that the role of science has been overcome by the urgency to build a repository rather than to study one.

Mr. Chairman, this program is an example of a tail wagging the dog and it is reminiscent of an earlier time when the demands of Cold War drove nuclear energy policy at our Nation's defense nuclear facilities. We simply cannot afford to make the same mistakes

today that we did 40 years ago because of unrealistic and unnecessary deadlines.

In closing, Mr. Chairman, I would urge the committee and the rest of Congress to do two things to get the high-level nuclear waste program back on track. First, join the over 40 Members of the House and Senate, including Chairman Sharp, Representative Lehman, and Representative Markey, from this subcommittee, the Western Governors Association, the Nuclear Waste Technical Review Board, the GAO and numerous public interest groups, calling for a presidential commission to conduct an independent comprehensive review of the civilian radioactive waste program.

Second, review critically any legislative proposals that seek to diminish Congress' oversight in the nuclear waste program or to relax health and safety standards for Yucca Mountain. These two are very simple steps I believe that can begin the process of bringing credibility to the DOE's high level nuclear waste program.

Mr. Chairman, outside of my statement I would like to tell you the feeling I have had in talking to people in the industry and around the country is the fact that desperation, as Mr. Bilirakis has said, from the nuclear industry at their sites when they are overpouring with radioactive material the States do want to get it out of there. The industry wants to get it out and at this point they don't care where that goes as long as it leaves that site and goes someplace else and it is not their problem any more.

But the fact is if you talk to most scientists, I have not found a single scientist that believes that you can store highly radioactive material for thousands of years safely and the fact is, Senator Reid had an assignee from one of the think-tanks in this country assigned to him a couple of years ago and he sat down with me and he said, Senator Reid, he said, "Listen. You have to realize that if they find that there is a volcano ready to erupt underneath Yucca Mountain, that they are going to find a conclusion that they can build around that and even if it erupts it won't blow up and you won't have radioactive material. If they find that this is the most highly prone earthquake zone in the world, they are going to find a way to tell you they can build it regardless of if it is the most highly earthquake-prone area in the United States."

They want this site to be classified as the right site and no matter what the problem they find, when they find it, no matter how dangerous it is, there is going to be a solution proposed, and believe me, the industry is going to buy off fast on it. DOE is going to try to find a solution to do it there because the fact is they want to get rid of the material.

There are better solutions and the danger—I mean, it is hard for me to believe that there are sister States—Utah, Colorado, Arizona, California and all the rest around—in shock either because if this thing erupts and vents, you are not only going to have pollution in southern Nevada, but you are going to have radioactive material spreading all through the western States all the way into the Midwest.

This is a dangerous precedent we are using here. Trying to race forward at a pace because everybody wants to get rid of the nuclear waste stored at their facilities and the fact is we have to do this carefully because future generations of Americans, not just Nevad-

ans, their life and safety is at risk because no one I can find really believes you can safely store this kind of material for thousands of years and I think that we have to go slow and we have to make sure science is there, the right site, if it isn't the right site, can we store below ground safely?

I think this is going to take years for this to go on and to change it and to change—take the EPA out of it, the next thing they would want to take the Nuclear Regulatory Agency out of it. Then they are going to want to change the standards again.

Every problem that they face, the solution is not going to be to try to find what the correct answer is. The solution is going to be, from the nuclear industry, is how to get around it and find a way to go around the marginal line and to get to the low lands of France or Belgium, and this is the same sort of situation.

They are going to go around us and move over so they can eventually build there thing regardless of whether it is safe or not. That is what we as Nevadans fear and I think all Americans should fear and I think it is a very, very serious thing and I think the chairman knows the pressure that is there to get the stuff out of these nuclear plants around the country regardless of whether it is safe or not.

Thank you.

Mr. SHARP. Thank you very much, gentlemen.

We are very aware of your concerns. Both you and Mrs. Vucanovich are never reluctant to not only testify, but to call us and collar us and tell us. And I am sure the people of Nevada, if they don't understand it, they should understand that they have very strong and powerful voices here who are continually reminding all of us about the issues that you both have testified to.

Let me just briefly ask, Mr. Bilbray, you mentioned that perhaps deep geologic was just simply not something at this stage that is appropriate, that maybe we just can't scientifically know that is the answer. I believe you were suggesting that. You were certainly suggesting that with respect to the Yucca Mountain site.

Do you think we ought to switch courses and just go to monitored retrievable storage and find one or two sites in the country where we can put it and guard it and study the science and come back 30 or 50 years later and decide if this is—if we are ready then or if there is a more appropriate way to do it?

Mr. BILBRAY. The nuclear negotiator, Mr. Stallings, tells me that his negotiations have been pretty successful in that he has at least two sites that are potentials for an MRS. I am not scientist enough to tell you how safe an MRS is. I don't know.

I can't tell you whether or not you can store safely material for 30, 40, 50 years in an MRS safely. I think that is a question that has to be asked to science and scientists to answer today and there may be some panelists that can answer that question.

I think that the only thing—what I am saying is, and I don't know if an MRS, I don't know if it is best to store it on site and do dry cask storage and protect it at the sites that exists today rather than risk the transportation of it not once, but maybe twice, to an MRS and then from an MRS on to another site. I don't know what the solution is to that and I think it takes a lot more people

with a lot better scientific background than I to answer that question.

Senator BRYAN. Mr. Chairman, the one thing that it seems to me ought to be a baseline of agreement is why has the Department resisted under this administration and previous administrations empaneling an independent body to review the policies of nuclear waste? I mean, it is beyond my comprehension as to why that is resisted, but it is tenaciously resisted.

I mean there are all kinds of phoney excuses that are offered. And there is an independent financial review that is taking place, but there is no overall review. They spent \$4 billion—and as Congressman Bilirakis pointed out, they really haven't made much progress. I mean, it is a case of incredible management ineptitude.

I think we can all agree on that wherever you come down on the nuclear. It is not negotiating any better and it is constantly being driven by deadlines that are unrealistic and obviously by the politics that seek to change the standards, change the nature of the program, based upon difficulties that are encountered that they cannot surmount with the original program that was sold to the Congress in 1982.

It is my view, Mr. Chairman, that the original Act was a reasonable structure. Look throughout the country. Try to find various different geological formations, whether it is tuft or salt dome or granitic formations, make the decision after characterizing its sites and sending three to the President.

You know and every Member of Congress knows what has happened, I mean, in this game of nuclear roulette. Nevada's number always comes up and it has always been in the course of a conference where you can't amend it or you can't debate it and I think that has been a policy the effect of which has cost billions of dollars an will cost billions of dollars more.

Mr. SHARP. I will recognize the distinguished gentleman from Florida.

Mr. BILIRAKIS. Thank you, Mr. Chairman.

Well, gentlemen—and I mean this sincerely—you have been great representatives for the people of your State. I don't know how much more anyone could expect you to do than what you have been doing on this issue.

With all respect, I basically would ask the question, Jim, you talked about the more time, more study, that sort of thing. Well, I am just not sure that there is too much more time. We have been, I guess, about as cautious as we possibly can be. If caution can transmit into time or time translate into caution, God knows it is there.

So I would respectfully ask the question and that is if there were this independent commission, Senator, that you suggested, and if they ultimately came down to let's say Yucca Mountain or maybe another location in Nevada, would that be acceptable because it comes from an independent commission?

It seems to me that just about every group in creation has already been involved in this issue, but there may be some people out there who would qualify as an independent commission. Would it be acceptable then?

Senator BRYAN. Congressman, I think that the issue should not be the question of an independent group to analyze is Yucca Mountain sufficient because that is a matter of scientific inquiry which, in my view, has been distorted by politics. I am saying a fundamental review of the program: Is this the right approach? Is this the right approach?

You know, nowhere is it written, with all due respect, that it has to be deep geological burial and that it has to be in Nevada.

Mr. BILIRAKIS. I understand they are doing it differently in parts of Europe.

Senator BRYAN. That is what I am saying.

Mr. BILIRAKIS. I appreciate all of that. It is a tough question. I don't know how you can really answer it and do justice to yourself, but I guess I am saying if an independent commission were to come into being and they basically recommended that we continue on where we are now, except we speed up the process because God knows the process is crawling about as slowly as it can crawl, would that be acceptable?

I would think not. It probably would not be.

Senator BRYAN. The problem is I think your question kind of inherently is focused on Yucca Mountain. It seems to me if you have an independent review of the program, you know, there ought not to be a restriction that we confine it only to Yucca Mountain.

Mr. BILIRAKIS. I appreciate that.

Senator BRYAN. But to look at it in overview.

Mr. BILIRAKIS. It only seems to be focused on Yucca Mountain because if, I ask the question if, in fact, they came down to Yucca Mountain or one of the solutions would be Yucca Mountain and not Yucca Mountain alone, would that be acceptable? I would think it probably would not be because you would still be up there telling us the same thing and I don't blame you one bit.

I am certainly not maligning you for it. You are doing your job. It is tough, it is a tough problem.

Mr. BILBRAY. I think we are talking apples and oranges. We are talking about the presidential commission is just one to review the process to make sure that they are going in the right way. We still need the scientific evidence because no—the Nuclear Regulatory Agency will never license a site unless that site has gone through tremendous, tremendous screening and every aspect of it and what happens at the site is they make so many mistakes, they do a test and they have unqualified people do it, then they find out they were unqualified and somebody challenges it, then they have to go back and redo it over again. And it has just taken forever.

The fact is that even after this—if everybody thinks this site is going to open like in 2010, unless you disregarded all the laws and just said, "This is the site. We don't care what the scientific evidence is", that site will never open around 2010.

Mr. BILIRAKIS. You want it to take forever, don't you, Jim?

Mr. BILBRAY. Well, I hope so. I hope it goes to 3010. The fact is that even a lot of the environmental groups are watching this today.

You think Shoreham was a lawsuit. You wait to see what kind of lawsuit comes down on this one in the end result. I guarantee you this thing, if the nuclear industry sitting out there at their

plant and the people in Florida waiting for this stuff to be shipped out, we will all be old men. We are old now, but we are really going to be old when that comes before it happens.

We are just asking that—let the process continue to go along with the scientific evaluation. I think what the Senator has proposed about a presidential commission to look over and see how many screw-ups have been made and what is going on out there and what can be done to move it right way.

Meanwhile, let the Federal negotiator, Mr. Stallings, continue to negotiate with different Indian tribes and different States to see if he can't secure permission to build an MRS in one of those States. I understand he told us the other day that he is very close to reaching an agreement with at least one tribe in one State.

I think you should be investigating that in talking to them. I am sure you have, Mr. Sharp, but we have to move forward in those areas. That would take the pressure off down the line. But we do not want to change the law that one of the things that we are fearful of—and I think Senator Bryan alluded to it—is that you are going to decide, "Well, it is going to take forever to build it at Yucca Mountain. Let's change the law. Let's allow an MRS to be built today and let's put it out at Yucca Mountain."

We think that is unfair and is not the way it should go. I think the negotiator is doing a good job and hopefully can find a spot where people are agreeable to take it, a State that is agreeable to take an MRS.

Mr. SHARP. The gentleman from Illinois, Mr. Hastert.

Mr. HASTERT. Well, I thank the chairman. It is interesting to sit and listen.

I have to say, Representative Bilbray and Senator, I have sat on this committee for a number of years and you have brought in different teams—Congresswoman Vucanovich, you, and others—and you have been able to stall this process for a long, long time and I certainly commend you for representing your people in Nevada and the people who waylay that process and stretch it out. I am sure you would be happy to see this thing resolved in the year 3010.

Mr. BILBRAY. Mr. Hastert, I don't think we have ever delayed anything. I think DOE and the process have delayed itself. If I could throw myself in front of a plow, I would to stop this thing, but I think that the process itself is falling apart and that is what has been the problem and the fact is that the science has been poor.

Mr. HASTERT. I think there are probably some reasons that the processes have been delayed, but there is a fact that I have to look at, you know. We have collected from the industry, from ratepayers in this country, almost \$10 billion—\$10 billion to solve a problem. Ratepayers in my State have contributed \$1.3 billion to solve the problem. And the problem doesn't seem to be any closer to being solved than when we started this process 20 some years ago.

You know, it behooves us to make sure that there is a solution out there, that we don't play musical chairs, as you alluded to, with this process and this component of nuclear waste that is out there and we find a real solution. I hope that this committee can move forward, prod on DOE, and EPA and NRC and all those other folks

out there that have a canoe or a paddle in the water and sitting in this canoe and that we can get moving on it. I hope that there is some type of a way that we can work together to find this solution.

But to say that, you know, there may be a volcano some day or there may be an earthquake some day, you have to realize that this stuff, if you want to call it that, is sitting in highly populated areas where there are earthquakes, where there is—where it is not protected and it is to the point where it is going to be stacked right out on the flat concrete next to the reactors and that not acceptable and we need to find a solution.

Whether it is Yucca Mountain or Indian reservations in Nevada or someplace else, I don't know where they are going to be, but we need to find a solution and we need to quit playing politics with this issue and move forward with real science and move toward a solution-based result.

Senator BRYAN. May I respond, Congressman?

Mr. HASTERT. Sure.

Senator BRYAN. I agree we need to quit playing politics and I make no critical comment directed to you or your colleagues on this committee, but talking about politics, I mean clearly the 1982 Act said search the entire country. We will look at various granitic formations, tuft, salt domes and others.

We said look, that ultimately three sites will be sent to the President for his determination, that there would be regional balance and equity. In 1982, I just had been elected Governor of the State of Nevada. I said that is not an unreasonable approach.

Well, here is what happened, as you will recall: In the campaign year of 1984, certain States were told during the course of the campaign, "Hey, you were out of the hut. Don't worry about it."

An examination of the Department of Energy's own records indicated that they abandoned any search east of the Mississippi because of politics. That is their internal DOE documentation. That is not a search from the people of the State of Nevada.

Then fast forward to 1987, and not in the context where you could debate it fairly all of a sudden then the act is gained politically, not scientifically by saying look we will only look, only look at Yucca Mountain. I would say in all due respect, I mean that was a decision that has created the very problem that you legitimately address and seek to solve at this point. That was all politics.

In 1992, after I came to the Congress, not in the context of a piece of legislation where you could hear testimony on, not in the context of the piece of legislation in which reasonable people could debate and be fairly heard on it, but in the course of a conference report which, as you well know, is not amendable.

Is there an effort successfully to compromise the standards to reduce the health and safety standards at every place in the country? No, only in Nevada at Yucca Mountain.

I would say that from our perspective, we have been victimized by the politics of this thing and that is why the feeling in Nevada is so profound and so intense and where, in response to Congressman Bilirakis' question, after you have had this for more than a decade, I have to tell you, you have great cynicism when the De-

partment of Energy comes to you and says, "Look, we would like to work with you and solve the problem."

Mr. BILBRAY. I think in addition, Mr. Hastert, you have got to remember we are building, if this is built, the most potentially dangerous facility in the history of mankind; the most dangerous. What we are afraid of is the fact that we have heard that since they can't meet the standards they think will be required under EPA and the Nuclear Regulatory Agency, then we are going to have to lower the standards to standards we can make and that is a dangerous thing, not only for Nevadans, but for the whole country.

If this facility was the most dangerous and the most potentially dangerous facility in the history of the world and if it was located in your State and you were told, "We can't meet those EPA standards. We can't meet the standards the nuclear Regulatory Agency requires", you would be standing in front of a tank, if necessary, like in Tiananmen Square like we saw that young man to do to stop it.

I guarantee you, you would be fighting the same way. We are saying keep the standards. We have to have tough standards because of the danger of this facility. I mean, this is dangerous, not only for us, for Americans, but for the entire earth.

Mr. HASTERT. I just want to remind the gentleman from Nevada that, you know, there are many of us that have States that believe this stuff is the most dangerous thing in the world, is not finding a facility that you could store it in; a reasonably safe and reasonably scientifically tested facility.

The most dangerous thing in the world is to let this stuff stack out on a tarmac someplace without any protection, open. We can't store it under water any more because the facilities are full and to find some reasonable place to put it. I don't know if we are ever going to find the perfect place to put it, but it is irresponsible of this Congress and us to sit here and say, "Well, we can't find a scientific solution, so we are just going to leave it the way it is."

Thank you, Mr. Chairman.

Mr. SHARP. The Chair thanks the gentleman and has an urge to get into the argument over what kind of things are the most dangerous in the world.

Weapons grade plutonium, I mean bomb grade plutonium hanging around throughout Europe and the Soviet Union is more threatening to all of us than any of these facilities.

The gentleman from Florida, Mr. Stearns.

Mr. STEARNS. Thank you, Mr. Chairman. Good morning.

I would like to make my opening statement a part of the record, if I might.

Mr. SHARP. Certainly.

[The opening statements of Messrs. Stearns, Hastert, Moorhead, and Klug follow:]

STATEMENT OF HON. CLIFF STEARNS

Mr. Chairman, before we have the opportunity to listen to our distinguished panel of witnesses today, I would like to express my concerns over the Department of Energy's view on the matter of its responsibility to accept spent nuclear fuel from America's nuclear power facilities by January 31, 1998.

For more than a decade, we have been wrestling with the issues that Congress initially sought to address with the passage of the Nuclear Waste Policy Act of 1992. At that time, a system was created whereby electric utility rate payers began funding the creation of a system for storing nuclear waste. Utilities and their rate payers have met their obligations under this compact. Regrettably, it appears certain that the Federal Government will not fulfill its obligations.

While I am aware that scientific and legal problems have plagued the effort to construct a nuclear waste repository, to me it is unacceptable that the Department of Energy appears to be denying any obligation to accept spent fuel in 1998. I strongly sympathize with those parties who believe it is DOE's legal mandate to find a suitable method for medium-term storage of nuclear waste until such time as a long-term storage facility is prepared for operations.

Mr. Chairman, I believe the Department of Energy needs to redirect its efforts from legal attempts to divest itself from responsibility for accepting fuel waste by 1998 to finding an environmentally safe way to store this waste for the medium term. It is my understanding that in other countries which rely heavily on nuclear power, medium term storage options are being used successfully. We need to explore how this can be done in this country so that dangerous levels of spent nuclear waste do not continue to accumulate at our power facilities.

My constituents and the people of Florida have paid hundreds of millions of dollars so that a safe, long-term solution to the nuclear waste problem can be developed. The DOE is more than a decade behind in this regard. The Department must make good on its obligation to accept spent nuclear fuel by 1998, or I will be leading efforts here in Congress to require it to do so.

Thank you, and I yield back the balance of my time.

STATEMENT OF HON. J. DENNIS HASTERT

Mr. Speaker, I want to commend you for holding this hearing today on the disposal of high-level nuclear waste. The issue of high-level nuclear waste management is of particular importance due to the uncertainty of the Department of Energy's objective to accept spent nuclear fuel into an operating Federal radioactive waste management system by 1998. Indeed, this uncertainty has the potential to jeopardize the future of this energy source.

Under the Nuclear Waste Policy Act, the Department of Energy was directed to develop a solution for the safe management of spent nuclear fuel from the commercial nuclear power plants that produce 20 percent of our electricity. Specifically, in return for payment of fees by customers of the electric utilities that operate nuclear power plants, the Secretary of Energy would, beginning in 1998, have a mechanism for environmentally-safe, cost-effective disposal of spent nuclear fuel.

To date, however, only the customers of nuclear utilities have met their obligation under this act. The Department is at least 16 years away from being ready to receive spent fuel shipments at the proposed Yucca Mountain site.

To her credit, Secretary O'Leary has recognized that the Federal Government has a moral obligation to meet its 1998 responsibility and is considering various options to fulfill its obligation. One such option under consideration is an interim off-site spent fuel storage capability. While this may address the immediate need of a storage site, it is only a short-term solution. As I have said many times, we cannot take our eyes off of the ball. In other words, we cannot allow an interim storage facility to divert our attention and efforts from our primary endeavor—to establish Yucca Mountain as the permanent repository for the permanent disposal of spent fuel.

Mr. Chairman, I look forward to hearing from our witnesses today. I am especially pleased that two of our distinguished witnesses are from Illinois: Sam Skinner, president of Commonwealth Edison; and Lynn Shisedo-Topol, commissioner of the Illinois Commerce Commission. I welcome them and look forward to working with them on this and other energy-related issues.

Thank you, Mr. Chairman.

STATEMENT OF HON. CARLOS J. MOORHEAD

Mr. Chairman, I am pleased that we are here today to investigate the status of the Department of Energy's nuclear waste disposal program. Twelve years after the passage of the Nuclear Waste Policy Act, and about 4 billion ratepayer dollars later, DOE still cannot tell us when, if ever, it will be prepared to meet its obligation to provide storage for our Nation's spent nuclear fuel.

The safe storage of spent nuclear fuel is everyone's problem, and the Nuclear Waste Policy Act made it clear that DOE is charged with coming up with a solution. Once the government assumed this task, it cannot simply ignore its commitment.

As time goes on, it is America's ratepayers that will bear the cost. As agreed to in their contracts with DOE, nuclear utilities continue to give DOE money collected from their ratepayers to build a central repository. Right now, the citizens of our country will pay twice: once to DOE for a storage facility that doesn't exist, and once to their utilities, which must build a suitable place to keep their spent fuel.

It is imperative that the Department find a means of fulfilling its commitment to begin acceptance of spent nuclear fuel in 1998. I know that there are lawsuits over whether or not DOE has a binding legal obligation to do so. In my mind, it is immaterial whether or not the courts finally find that they can enforce this obligation. The United States Government should not be forced by courts of law to keep its commitments to its citizens.

This committee should make its own commitment to work with DOE to deal with the problems in the structure of the nuclear waste disposal program. The people of the United States made a deal with their Government, and it must uphold its end of the bargain.

Thank you, Mr. Chairman.

STATEMENT OF HON. SCOTT KLUG

Mr. Chairman, I want to commend you for holding this hearing today. Storage of spent nuclear fuel rods is a subject that conjures up great emotions on both sides of this issue and one that has proven to be both politically and administratively difficult. However, the bottom line here is that the high-level nuclear waste needs to be stored safely.

Last year, this subcommittee met in concert with the House Natural Resources Subcommittee on Energy and Mineral Resources to look into the matter of permanently storing spent nuclear fuel at Yucca Mountain, Nevada. This hearing was our committees' opportunity to not only find out the status and concerns of the Department of Energy (DOE) in its study of Yucca Mountain, but also to remind DOE of its obligations under the Nuclear Waste Policy Act of 1982 to begin accepting spent nuclear fuel from commercial reactors by 1998. Our committee heard that DOE was doing its best to accommodate the provisions of current law dealing with disposal of spent nuclear fuel.

Yet, now we find ourselves looking at a Department that is not only being sued by commercial utilities that use nuclear power, but also by a group of state utility regulators who are fed up with DOE for "dragging its feet" on this important issue. While I cannot blame these groups for the actions they have taken, it is troubling to me that we even had to get to this point in the first place. How many times does Congress need to pass laws directing DOE action on this matter before something is actually done?

Mr. Chairman, about 20,000 tons of spent nuclear fuel is now in temporary storage at nuclear plants at 65 sites across the country. Three utilities that service my home State of Wisconsin, whose use of nuclear power accounts for about 24 percent of their electric generation, have their spent fuel pools filling up and will need to make serious and expensive choices about replacing that generation which nuclear power provides them in the next few years if DOE fails to fulfill its obligation.

I believe it is intellectually dishonest to advocate, with action or with silence, delay or postponement of activities that will further research and development of the best ways to accommodate safe storage. Nuclear plants are running, and because of this fact, waste is building. To ignore the legislative mandates of 1982 and 1987, not to mention the reality of spent fuel pools reaching their capacity, simply does not make spent fuel questions disappear. We must find a way to safely store the spent fuel, and then do it.

Later in this hearing, we will be hearing from the State of Nevada and the Mescalero Indians as to what perceptions and outlooks they have on the issue of spent fuel storage. I look forward to hearing their testimony on this matter. I believe it is important to understand why the State of Nevada is afraid of studying Yucca Mountain's feasibility and why the Mescaleros believe an interim storage facility can be safely achieved through them. I see it as vital to the process of properly storing spent fuel that we answer these questions and keep the process moving.

Finally, Mr. Chairman, as with most other things around here, we need to ensure that the taxpayers are getting a fair return on their investment. Through fiscal year 1994, DOE has spent over \$4 billion on this program to no avail. And, this is before we even get in to the controversy of what to do with the more than \$4.3 billion that

has been collected from rate-payers in the Nuclear Waste Fund. I believe if the money was raised for the research and development of safe, efficient, and effective storage of spent nuclear fuel, then let's see that it is put to that use.

The bottom line to me in this debate is whether the Federal Government is serious about providing a nuclear option in this country. If we are, and I support this option, then we have to take the steps to ensure that a safe, reliable, and steady source of energy is available to our constituents, who are also nuclear energy users and rate-payers. If the Federal Government is not serious, then we should quit pretending to do so. Either way, we should ensure that DOE honors its legislative mandates and safely moves to store spent nuclear fuel.

Mr. STEARNS. I share the same concern that Mr. Hastert does because my State has paid hundreds of millions of dollars for a safe, long-term solution and yet we have this being delayed.

Let me just ask a simple question: Isn't this problem being solved with other countries, they are finding—

Senator BRYAN. Not this way. Only America is deciding to do it this way, Mr. Stearns; only America.

Mr. STEARNS. But aren't other countries successful in finding solutions to this problem that we are dealing with?

Senator BRYAN. I suppose one can argue that and the technical people can respond. I don't know that there has been a satisfactory solution anywhere, but certainly nobody but America has got to have the deep geologic repository. We have these artificial deadlines we have to comply with. No other country in the world has approached it quite in that fashion, at least as I understand it.

Mr. BILBRAY. We can find no one. I met with the equivalent of the DOE in Russia a few years ago and talked to some of the leading scientists that were trying to dispose of their—of course, the Russians are certainly not the—I wouldn't say they are the great scientific brains on storage of nuclear material. But the leading scientists said they do not believe that you can safely store below ground nuclear waste of high-level nuclear waste. I have found no one in the French, from the Germans, from the Russians or anyone, that agrees it can be stored below ground safely.

Mr. STEARNS. So what you are both saying is that the other countries are not taking the approach we are taking?

Senator BRYAN. That is right.

Mr. BILBRAY. That is correct.

Mr. STEARNS. Are you also saying it is your opinion that the other countries are doing something that we should be doing?

Senator BRYAN. I think it is apparent we come back to this concept of a presidential commission independent, not one that is gamed politically, but an independent one to take a look at this and say, "Look, I have some sympathy for the fact that the rate-payers in your States have paid this kind of money."

They have every right to be bothered. They should be as outraged as Nevadans over the billions of dollars that have been wasted. The only thing I would say in response to the criticism, it is always suggested that essentially Nevada is the problem, that you know, gosh, the Nevadans have created this problem.

Look, there have been no lawsuits pending for several years now, no lawsuits pending for several years now, and yet, continually these deadlines slip. There are more problems.

I am sure you are going to hear testimony today about some incredible management problems that have nothing to do with Nevada's objections. One thing it seems to me that is not an unrea-

sonable approach and that is to allow those States that are continuing to pay into that to provide some relief in the fund for dry cask storage.

In other words, I have introduced legislation both in this Congress and previous Congress that says in effect, look, States that are being left with the responsibility of storing it because the high-level site is not open and it is not going to be in this century and maybe not in the next anywhere is to allow some type of a credit for a dry cask storage which has been licensed and it is much, much safer than the situation that Congressman Hastert pointed out and has been licensed by the Nuclear Regulatory Agency and at least this gives you a window of about a century to deal with it if it had to stay in any one position.

I think you are entitled to some kind of a relief under the Fund.

Mr. BILBRAY. Also, Mr. Stearns, if you check the reports from GAO and others, not once has anybody come back and said Nevada was responsible. Mr. Hastert has said we have done a remarkable job of delaying this. I would like to take the credit for delaying it, but the fact is it is like playing against a football team that fumbles 15 times and then they say what a great game we played. Well, the fact is the other team played a lousy game.

They continue to screw up in all the reports and look at the GAO reports and others. It was the DOE and the scientific investigations hiring people and having people doing tests that weren't qualified to do the tests, doing a test wrong, not keeping adequate samples, all of these things made them have to go back and redo all these things all over again.

It wasn't us. It was them, and that is what continues to happen.

Mr. STEARNS. Thank you, Mr. Chairman.

Mr. SHARP. Thank you.

The gentleman from Washington, Mr. Kreidler.

Mr. KREIDLER. I pass, Mr. Chairman.

Mr. SHARP. Gentlemen, we thank you very much for your time and attention and know that we will be hearing more from you and understand your very serious concerns on this matter.

Thank you.

Senator BRYAN. Thank you very much, Mr. Chairman.

Mr. BILBRAY. You will definitely hear from us again, Mr. Chairman.

Mr. SHARP. We are very pleased to have our next panel of witnesses. We welcome Dr. Daniel A Dreyfus, the director of the Office of Civilian Radioactive Waste Management with the United States Department of Energy; and Ms. Lynn Shishido-Topel, a commissioner with the Illinois Commerce Commission. She is here representing the National Association of Regulatory Utility Commissioners; Mr. Robert R. Loux, the executive director for the Agency for Nuclear Projects with the State of Nevada; Mr. Miller Hudson, a consultant to the Mescalero Utility Fuel Storage Initiative, representing the Mescalero Apache Tribe of New Mexico; and Ms. Krista Sanda, a commissioner with the Minnesota Department of Public Service.

Ladies and gentlemen, I think you are familiar with our processes. We will be happy to put any written materials you have into

our printed record and we would like to have your oral summary at this point.

We will start with Dr. Dreyfus.

STATEMENTS OF DANIEL A. DREYFUS, DIRECTOR, OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT, DEPARTMENT OF ENERGY; LYNN SHISHIDO-TOPEL, ON BEHALF OF THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS; ROBERT R. LOUX, EXECUTIVE DIRECTOR, AGENCY FOR NUCLEAR PROJECTS, STATE OF NEVADA; MILLER HUDSON, ON BEHALF OF THE MESCALERO APACHE TRIBE OF NEW MEXICO; AND KRISTA L. SANDA, COMMISSIONER, MINNESOTA DEPARTMENT OF PUBLIC SERVICE

Mr. DREYFUS. Thank you, Mr. Chairman. I will highlight my statement briefly.

When the Nuclear Waste Policy Act was first passed, it was assumed that a facility would be available in 1998 to accept waste for disposal.

The Department of Energy entered into contracts with utilities on that basis. As the program has evolved, standards and regulations have been developed in furtherance of policy. The result has been a complex undertaking that has not proven to be consistent with either the costs or the schedules that policymakers considered to be possible in 1982 or even in 1987 when the Nuclear Waste Policy Act was amended.

As we have evaluated the program over the past year, we realized that there no longer was internal consistency between the activities that were actually being carried out and the expectations for accomplishment. The problem can be considered in three components.

The first, with regard to the site characterization activities at Yucca Mountain, the funding that was being provided, and I would add, requested, would not support the work plan that we were embarked upon. There is a need to bring the program of work into conformance with the resources that can be obtained and to give our stakeholder a realistic estimate of the projected schedule and costs.

The administration has proposed a greatly increased funding profile for fiscal year 1995 and beyond, and there is a table attached to my statement that summarizes it.

Increased funding alone, however, will not regain the Yucca Mountain schedule. A proposed program approach is being developed in consultation with our regulators and our constituents to bring the planned activities at Yucca Mountain into conformity with the funding expectations and to determine realistic estimates of schedule and costs.

If it is funded, our proposed program approach can provide for a technical site suitability determination in 1998; and, if there is a final determination that the site is suitable, a repository could be capable of emplacing spent fuel in 2010.

The second component of the problem which has been addressed and mentioned today is the perception and the reality that program management needs improvement.

Based upon my own review, there is substantial room for improvement. We have been taking aggressive action to make more effective use of the resources we do have, and to better integrate program activities.

The Federal staff at Yucca Mountain has been reorganized to define clear lines of responsibility and accountability that are related to the project goals. The contractor establishment is being restructured to reflect the same philosophy. Program headquarters organization has also been realigned to put the emphasis on the near-term issues of waste acceptance and on the major management need of overall program integration.

The third component of the problem is the need to confront the issues of waste acceptance and interim storage. Until commercial spent fuel can be moved to either a centralized interim storage facility or to a repository, it will remain at reactor sites. The statistics have already been mentioned, but right now, utilities have spent fuel at one storage facility and 119 operating and shut-down reactors at 74 sites in 34 States. Most of it is in pools.

By 1998, 19 sites in 17 States will need to add storage capacity. If no central interim storage facility is available by 2010, when we would aspire to have a repository, 59 sites in 32 States will require supplemental storage, probably dry storage.

Because of lead time involved, at-reactor storage decisions are imminent for many utilities now. To reduce the uncertainty confronting these decisions, it is essential that the Federal waste management program be given clearly defined objectives and funded at a level that will enable us to carry out those objectives.

I would like to note, however, that even if we were to accept fuel starting in January 1998 consistent with the waste acceptance schedule that the Department has anticipated, many utilities in many States would still have to add new storage capacity.

Attachment 5 to my prepared statement illustrates that point.

Siting a repository continues to be the critical need and the ultimate goal of our program. Without progress toward a repository, all interim storage issues become far more difficult, but we must also define an appropriate strategy for interim management of spent fuel until a repository is available.

In the 1987 amendment to the Nuclear Waste Policy Act, Congress limited the Department's authority to site an interim storage facility.

A voluntary siting approach was instituted. To date, we have no voluntary host for a Federal facility, although the Nuclear Waste Negotiator continues to seek such a site.

Recent lawsuits are evidence of the controversy over interim spent fuel management and over the Department's role. We recognize that extended at-reactor storage presents serious problems, but we do not believe that the full range of views have yet been aired.

The Department has issued a Notice of Inquiry to invite views of interested parties on the interim storage issues and the Department's role. We hope that NOI will bring into discussions those that have not yet been heard from.

The administration continues to believe that some legislative resolution of the waste fund issue must be implemented. We want to

work with Congress on legislation that can resolve the apparent contradiction between disciplinary policies in the budgetary acts and the need to apply the fee to the urgent purposes for which it is collected. Adequate funding will be a critical component of any policy, any policy that is chosen for both short and long-term management.

With respect to the licensing of a permanent disposal facility and interim storage, the administration is not preparing legislation at this time. We view the Notice of Inquiry as an important element in the determination of the need and the content of such legislation.

The committee's letter of invitation also requested that we address defense waste which will be disposed of in the repository. I will be brief on this topic, but if the site is found suitable and receives a license, our current planning basis calls for the disposal of 7,000 metric tons of high-level waste from the defense program out of a statutory limit for the first repository of 70,000 metric tons, so 10 percent of repository is allocated to defense wastes.

This limit applies prior to the availability of a further repository.

The 7,000 metric tons translates into 13,500 canisters of high-level radioactive waste, probably vitrified waste, from the vitrification plants in Savannah River and Hanford. Our most recent evaluation of the quantity of high-level waste indicates that as many as 50,000 such canisters may require disposal.

There are additional miscellaneous wastes that should eventually be emplaced in a geologic repository. The specific characteristic and amounts are not well known. Treatment and disposal options are not as well defined as for spent nuclear fuel and conventional high-level waste.

The amount of miscellaneous waste is relatively small and the general characteristics are not significantly different from the waste we are currently planning on emplacing. We estimate the total of miscellaneous waste that may require geologic disposal to be less than 3,000 metric tons. Again attached to my statement is a map showing the locations of all spent fuel and high-level radioactive waste ultimately destined for geologic disposal and some supporting descriptive material.

In summary, there are no quick fixes to nuclear waste management. The long-term policies we pursue will have to serve society for tens of thousands of years. The near-term issues will require collaboration among a broad group of participants.

We must redefine the near-term objectives for the program based on strong and broadly-based public support. I believe it would be inappropriate, however, to delay progress on the program while we argue and study the issues in the abstract.

Some 30 years was spent arguing these issues in the abstract before any action was taken. We have the nuclear waste problems in the weapons system to show for the delay. The historical experience shows that we will only resolve these issues through the persistent effort to implement the program. We have only discovered the issues that confront us today through the effort to implement the program. My office intends to carry out its mission in a way that will ensure public health and safety, protect the environment, foster public confidence, and be economically viable.

We look forward to cooperating with the Congress in the further development and implementation of an effective and feasible program.

Thank you, Mr. Chairman. I will respond to questions when you wish.

Mr. SHARP. Thank you very much, Dr. Dreyfus.

[Testimony resumes on p. 49.]

[The prepared statement of Mr. Dreyfus follows:]

DANIEL A. DREYFUS, DIRECTOR

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

I appreciate the opportunity to appear before you today to discuss the status of the nuclear waste program as it relates to the permanent disposal and interim storage of spent nuclear fuel.

BACKGROUND

In 1982, Congress enacted the Nuclear Waste Policy Act which initiated a Federal high-level radioactive waste management program. This program is based upon a strategy of deep geologic disposal to isolate the waste for tens of thousands of years; the same strategy has achieved an international consensus. The Act confirmed that the long-term management and eventual permanent disposal of spent nuclear fuel and high-level radioactive waste would remain a responsibility of the Federal Government. The Act also established the Office of Civilian Radioactive Waste Management within the Department of Energy to carry out this responsibility. In addition to spent fuel from commercial nuclear power plants, the program is also responsible for disposing of high-level radioactive waste which will result from the cleanup of the Nation's nuclear weapons complex.

In 1987, the Nuclear Waste Policy Act was amended, and Congress directed that we limit our studies of a permanent geologic repository to one candidate site - Yucca Mountain, Nevada.

When the Nuclear Waste Policy Act was first passed, the Department envisioned that it would have a facility available in 1998 to accept waste for disposal. The Department of Energy entered into contracts with utilities on that basis.

But the repository site characterization effort has proven to be far more complicated and time-consuming than anyone envisioned in 1982. As the program evolved, standards and regulations were developed in furtherance of the policy. The resulting complex undertaking is not consistent with either the costs or the schedules that policymakers considered to be possible in 1982, or even in 1987 when the Nuclear Waste Policy Act was amended.

CURRENT SITUATION

As we have evaluated the program over the past year, we realized that there no longer was internal consistency between the activities that were actually being carried out and the expectations for accomplishments. The problem can be considered in three components:

First, with regard to site characterization activities at Yucca Mountain, the funding that was being provided was not adequate to support the work plan that we were embarked upon. There is a need to bring the program of work at Yucca Mountain into conformance with the resources that can be obtained and to give our stakeholders a realistic estimate of the schedule and costs for the project.

The second component of the problem is the perception, and the reality, that program management needs improvement. We have admitted to that, and I believe we have defined the needs.

The third component of the problem is the need to confront the issues of waste acceptance and interim storage. Here, too, the activities recently being pursued have become inconsistent with expectations for accomplishments. We have to define the needs of interim waste management, arrive at a strategy to address those needs, and acquire the resources -- including the policy direction -- required to carry out the strategy.

We have taken steps to address each of the three components of the problem.

Repository Site Characterization

Based on our assessment of the Yucca Mountain project, we are currently discussing a revised program of work, consistent with the proposed funding, with the Congress, our regulators, and other stakeholders. The project we are developing will maintain the scientific validity of the work at the site, but it will be more cost-effective. The Administration has proposed a greatly increased funding profile for Fiscal Year 1995 and beyond, that will support this new more effective project of site characterization (Attachment 1). Funding would be provided from two sources (1) annual appropriations, and (2) proposed mandatory spending from a special fund.

Increased funding alone, however, will not regain the Yucca Mountain schedule. We have also initiated changes to the program. A Proposed Program Approach

was developed to bring the planned activities at Yucca Mountain into conformity with the Fiscal Year 1995 budget request and out-year funding expectations, and to determine realistic estimates of schedules and costs. The approach also addresses some of the issues of waste acceptance, interim storage, and transportation.

The proposal was formulated to ensure efficient, incremental progress toward determining the suitability of the Yucca Mountain site for a permanent repository and, if the site is suitable, to proceed with the Environmental Impact Statement, site recommendation, License Application, and construction of a repository.

The Proposed Program Approach will provide for a Technical Site Suitability Determination and a Draft Environmental Impact Statement in 1998. The scoping process for preparation of the Draft Environmental Impact Statement will be initiated in 1995. The Final Environmental Impact Statement will be completed in 2000 and a Site Recommendation Report will be provided to the President later that year, if there is a final determination that the site is suitable. Repository licensing is an incremental process beginning with submittal of the License Application for construction authorization in 2001, an updated application for a license to receive and possess spent nuclear fuel and high-level waste in 2008, and a final application for a license amendment to close the repository during or before 2110. The proposal to keep the repository open for up to 100 years will provide adequate time to monitor the effects in the repository due to emplacement of radioactive waste. Attached to my statement (Attachment 2) is a time line that illustrates this schedule.

If we are successful in obtaining the funding and in achieving acceptance of our proposed program of work, a repository could be capable of emplacing spent fuel in 2010.

Program Management

The second component of the problem is the perception, and the reality, that program management needs improvement. Your Committee has expressed concerns over program management to the Secretary, and there have been a number of critical reports over the past few years. We have conducted a comprehensive review of nuclear waste management policies and programs.

Shortly after her confirmation, the Secretary began a series of interactions with program stakeholders to solicit concerns, opinions, and recommendations for program direction. The Secretary commissioned two separate assessments of specific aspects of the program. First, she committed to an independent financial and management review of the Yucca Mountain Site Characterization Project. That review is under way. Additionally, the Secretary commissioned an independent study of reports, papers, and significant comments written about the program during the previous years, to include comments made by oversight organizations, physical and social scientific bodies and technical observers, interest groups, and private citizens. That review is nearing completion.

Based on our review there is substantial room for improvement. We have been taking aggressive action to make more effective use of the resources we have

available to us and to better integrate program activities.

The Federal staff at Yucca Mountain has been reorganized to define clear lines of responsibility and accountability related to project goals. The contractor establishment is being restructured to reflect the same philosophy. The program's Headquarters organization has also been realigned to place emphasis on the near-term issues of waste acceptance and the major management needs of overall program integration. We are putting our talent and human resources where the critical needs are. We are backing this reorganization up with strong human resource considerations and business management improvements.

Near-Term Management of Commercial Spent Fuel

The third component of the problem is the need to confront the issues of waste acceptance and interim storage. Until commercial spent nuclear fuel can be moved to either a centralized interim storage facility or a repository, we anticipate it will remain at reactor sites. Right now, utilities have spent fuel stored at one spent fuel storage facility and 119 operating and shut-down reactors at 74 sites in 34 states.

- By 1998, 19 sites in 17 states will need to add storage capacity.
- If no central interim storage facility is available by 2010, the year we are now expecting to open a repository, 59 sites in 32 states will require supplemental storage, probably dry storage.

Attached to my statement (Attachments 3 and 4) are maps of the United States

showing which states will require dry storage facilities in the year 2000 and the year 2010.

Because of the lead time involved, at-reactor storage decisions are imminent for many utilities. Over twenty percent of the electricity supply of the United States is provided by operating nuclear power plants. The confidence that the public can have in the Federal responsibility to carry out a nuclear waste program will influence decisions on the continued operation of many power plants. To the extent that the operation of efficient power plants is foreshortened, a large, financial cost will be incurred by utilities and their ratepayers.

To reduce the uncertainty confronting these storage decisions, it is essential that the Federal waste management program be given clearly defined objectives, and be funded at a level that will enable us to carry out those objectives. I would note, however, that even if the system were to accept the spent fuel removed from reactor sites starting in January 1998 consistent with the waste acceptance schedule that the Department had anticipated, many utilities in many states would still have to add new storage capacity. Attached to my statement (Attachment 5) is a figure which illustrates this point.

Siting a repository continues to be a critical need and the ultimate goal of our program. Without a repository, all interim storage issues become far more difficult, but we must also define an appropriate strategy for interim management of spent fuel until a repository is available. In the 1987 amendment to the Nuclear Waste Policy Act, the Congress limited the

Department's authority to site an interim storage facility. The Secretary may not select a site for a monitored retrievable storage facility until a recommendation is made to the President for the approval of a site for a repository, and construction of a monitored retrievable storage facility may not begin until the Nuclear Regulatory Commission has issued a license for the construction of a repository.

A voluntary process for siting a monitored retrievable storage facility was instituted. The Congress last year further limited the financial support for entities that wish to explore possible sites with the Nuclear Waste Negotiator. To date, we have no voluntary host for a Federal facility, although the Nuclear Waste Negotiator continues to seek interested parties.

The Department's options to address near-term storage, therefore, are severely limited. The Department is implementing plans for a standardized multipurpose canister (MPC) to support spent nuclear fuel transportation, storage, and disposal. The MPC has the potential for offering considerable standardization, simplification, and thus cost savings for utilities and the Federal waste management system. This standardized canister will be a valuable advanced technology for at-reactor storage and a major element for resolving the interim spent fuel management issue. Its availability, however, will not fully address the economic, equity, and technical considerations of extended at-reactor storage.

Recent lawsuits are evidence of the controversy over the approach to interim

spent fuel management, and the Department of Energy's role. Legal action has been taken by some of the states, public utility commissions, and nuclear utilities who are concerned that the program will not meet the legislative goals set forth in the Nuclear Waste Policy Act.

On May 25, 1994, the Department of Energy formally issued a Notice of Inquiry (NOI) to invite the views of interested parties and to advance the consensus-building process. We hope that the NOI will bring into the discussion any parties that have not yet been heard from. The issues for which views are being elicited include:

- The Department's preliminary view that it does not have a statutory obligation to accept spent nuclear fuel in 1998 in the absence of an operational repository or other facility constructed under the Act.
- The need for an interim, away-from-reactor storage facility prior to repository operations.
- Options for offsetting, through the use of the Nuclear Waste Fund, a portion of the financial burden that may be incurred by utilities in continuing to store spent nuclear fuel at reactor sites beyond 1998.

We recognize that extended at-reactor storage presents problems, and we do not believe that the full range of views has been aired. We look forward to receiving the views of all parties on this critical National issue.

I believe a sound strategy for near-term spent fuel management can be

developed. If we approach the needs and options realistically, we can put the program activities, the expectations, and the resource commitment back into agreement and make real progress quickly. I am encouraged that even in this tight budget year, Congress has expressed its support for funding the program as a high priority. The FY 1995 budget passed by the House contains \$50 million more for our program than we had in FY 1994, while the Senate has approved \$150 million more. The funding increase, along with management improvements, will put the long-term program back on course.

The Department of Energy cannot act alone to define the strategy that should be taken to solve the near-term waste management problem. There is a realization that policy decisions must be made and that the awareness is broadening. There is much less consensus on what can and should be considered as options. I think that the Department and Congress have an obligation to advance the process.

CONSIDERATION OF LEGISLATION

In the Committee's letter of invitation for this hearing, the Department was asked to address whether it felt legislation is needed to assist efforts, public or private, to develop a permanent disposal facility (or facilities) and whether legislation is needed to ensure that waste is safely stored in the interim. I would like to respond in two parts. The first is in financial support, the second is with respect to repository or interim storage facilities.

In its communication of March 7, 1994, the Administration proposed that appropriations continue to be made from the Nuclear Waste Fund and the Defense Nuclear Waste Disposal account, but that an additional portion of each year's utility fee receipts be made available for the intended purpose of funding the Civilian Radioactive Waste Management Program and providing a viable approach regarding nuclear waste storage and disposal. The Administration continues to believe that some similar approach to the waste fund issue must be implemented in order for us to be successful and accomplish the program's mission. We are working within the Administration to develop a realistic approach to the problem, and we want to work with Congress on legislation to resolve the apparent contradiction between the budget discipline policies and the need to apply the current fee, which is assessed on the generators of the waste, to the urgent purposes for which it is collected. Adequate funding will be a critical component of any policy that is chosen for both short and long-term management.

With respect to legislation for assisting efforts to develop a permanent disposal facility (or facilities) and ensuring that waste is safely stored in the interim, the Administration is not preparing legislation at this time and has not developed a position on legislative proposals or concepts that have been discussed in public or reported in the press. We view the Notice of Inquiry that we issued on May 25, 1994, as an important element in the determination of the need for and content of such legislation.

DEFENSE WASTE

In the Committee's letter of invitation for this hearing, it was also requested that we address questions related to the Nation's defense waste which will be disposed of at the Yucca Mountain site. If the site is found suitable and receives a license, our current planning basis calls for the disposal of 7,000 metric tons of high-level waste from the defense program, out of a total statutory limit for the first repository of 70,000 metric tons, prior to operation of a second repository. The 7,000 metric tons translates to 13,500 canisters of high-level radioactive waste. It should be noted that the planned emplacement of waste in a first repository is constrained by law. The technical limitations of the site are not yet known.

In 1985, the President determined that the high-level waste produced at the Hanford Plant, the Savannah River site, and the Idaho National Engineering Laboratory could be emplaced with the commercial waste in a repository. The Department anticipated that initially there would be a total of 20,000 canisters of defense waste from those facilities. The Department's most recent evaluation of the quantities of high-level radioactive waste indicates that as many as 50,000 canisters may require disposal.

There are additional miscellaneous wastes that should eventually be emplaced in a geologic repository. Specific characteristics and amounts are not well known. Treatment and disposal options for these wastes are not as well defined as for spent nuclear fuel and conventional high-level radioactive waste. The amount of miscellaneous waste is relatively small and the general

characteristics of the waste are not significantly different from waste that we are currently planning on emplacing. Currently, we estimate the total amount of miscellaneous waste that may require geologic disposal to be less than 3,000 metric tons. Attached to my statement (Attachment 6) is a map showing locations of spent nuclear fuel and high-level radioactive waste ultimately destined for geologic disposal and a supporting matrix description of the localities.

Although the Department's most recent analysis indicates that there will be more than 70,000 metric tons of spent nuclear fuel that requires disposal in a geologic repository, there are a number of assumptions such as future nuclear generating capacity, types of reactors, and methods of waste treatment that are involved in the projection. The Department of Energy will be in a better position to determine the need for a second geologic repository between 2007 and 2010, as required in the 1987 amendment to the Nuclear Waste Policy Act. In any event, the ability to implement the national radioactive waste strategy in a licensed geologic repository must be demonstrated in establishing the first such repository, as required in the 1987 amendment to the Nuclear Waste Policy Act.

CONCLUSION

There are no quick fixes to nuclear waste management. The long-term policies we pursue will have to serve society for tens of thousands of years. The near-term issues will require collaboration among a broad group of participants. We must redefine the near-term objectives based upon strong and

broadly based public support. It would be inappropriate, however, for us to neglect the issues on nuclear waste disposal, or to delay progress while we argue and study the abstract issues. The historical experience shows that we will only resolve these issues through the persistent effort to implement a program.

This is a critical time for the program. The Administration has assigned a high priority to the management and disposal of the Nation's spent nuclear fuel and high-level waste. The program intends to carry out its mission in a way that will assure public health and safety, protect the environment, foster public confidence, and be economically viable. We look forward to cooperating with the Congress in the further development and implementation of an effective and feasible program.

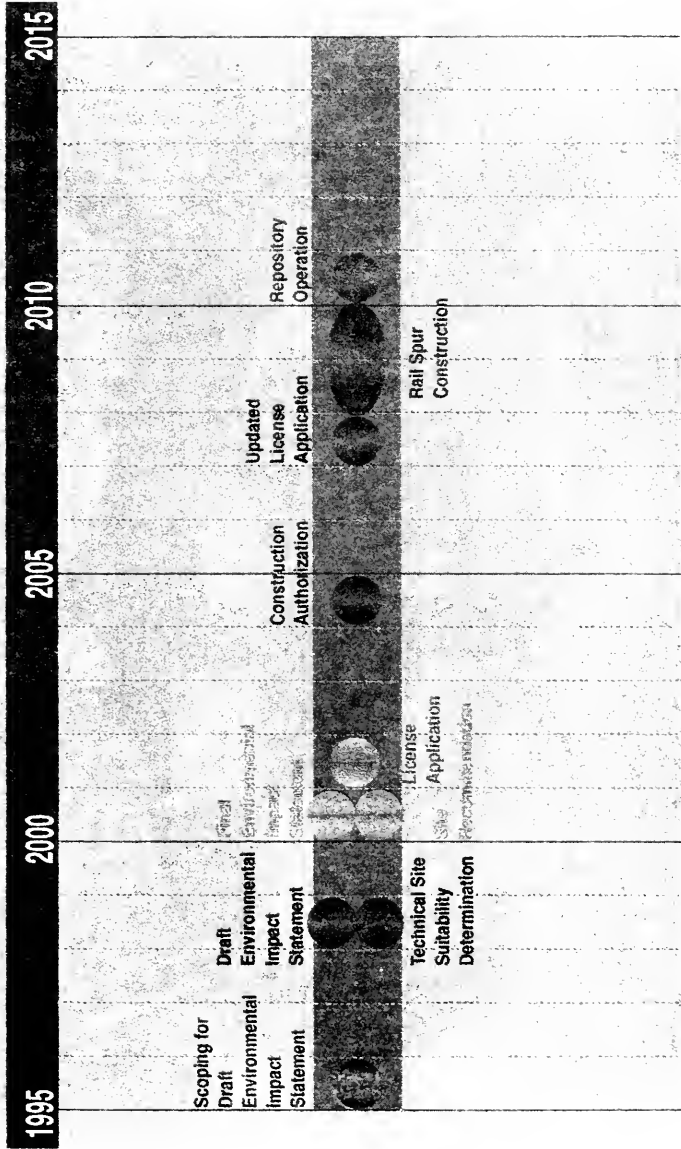
This concludes my statement. I would be happy to take any questions you may have at this time.

OCRWM FY 1995 Congressional Budget Request

(Comparable Dollars in Millions)

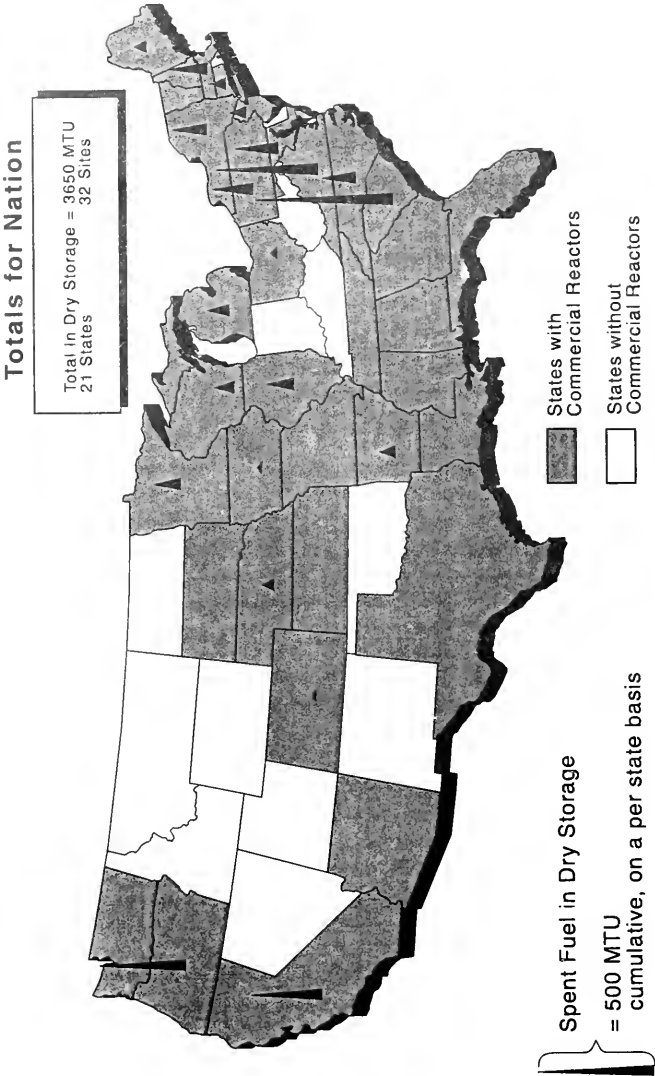
Budget Element	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999
Yucca Mountain Site Characterization Project	242	260	381	470	510	511	915
Advanced Technology for Near-Term Storage	16	15	30	29	32	50	68
-Spent Fuel Storage	19	14	21	23	26	30	21
-Transportation System	3	3	6	7	9	10	11
-Waste Acceptance	38	32	57	59	67	90	100
Subtotal							
Program Management and Compliance	95	88	94	101	107	112	117
Subtotal, Nuclear Waste Activities	375	380	532	630	684	713	732
Civilian Waste R&D	4	6	0.7	0.7	0.7	0.7	0.7
Total Program (rounded to millions)	380	381	533	631	685	714	733
Funding							
• Nuclear Waste Fund	275	260	255	265	276	287	298
--Base Appropriation	----	----	148	236	279	297	305
--Special Account	275	260	403	501	555	584	603
Subtotal							
• Defense Nuclear Waste Disposal Approp.	100	120	129	129	129	129	129
• Civilian Waste R&D (Energy Supply R&D)	4	6	0.7	0.7	0.7	0.7	0.7
Total Program (rounded to millions)	380	381	533	631	685	714	733
Utility Fees	437	391	551	585	591	592	600

Estimated Schedule for Yucca Mountain Project



Calendar Years

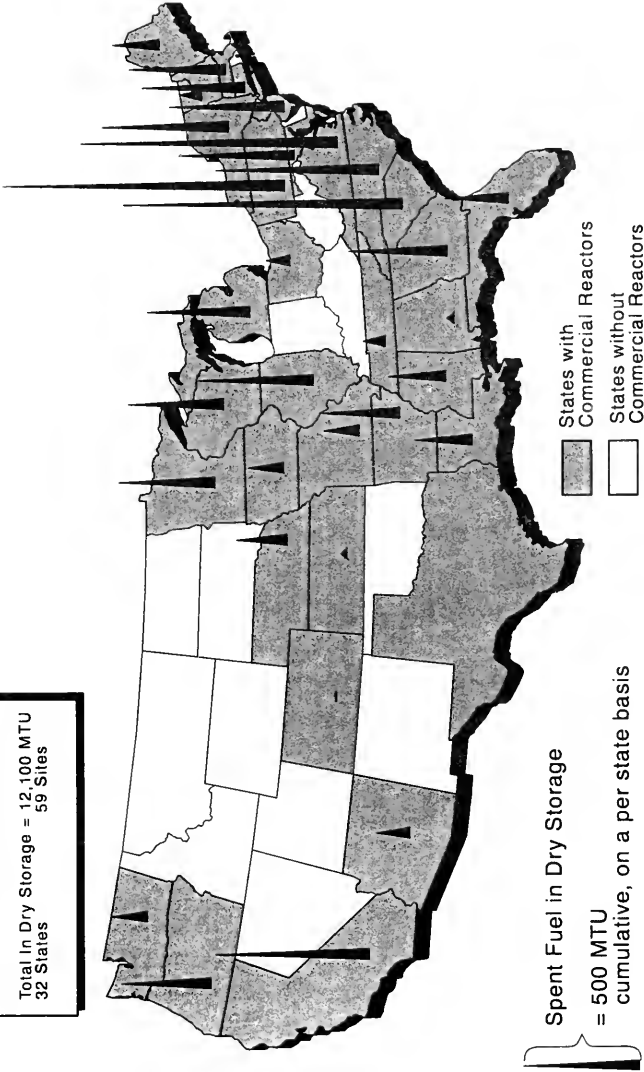
STATES NEEDING DRY STORAGE FACILITIES IN 2000



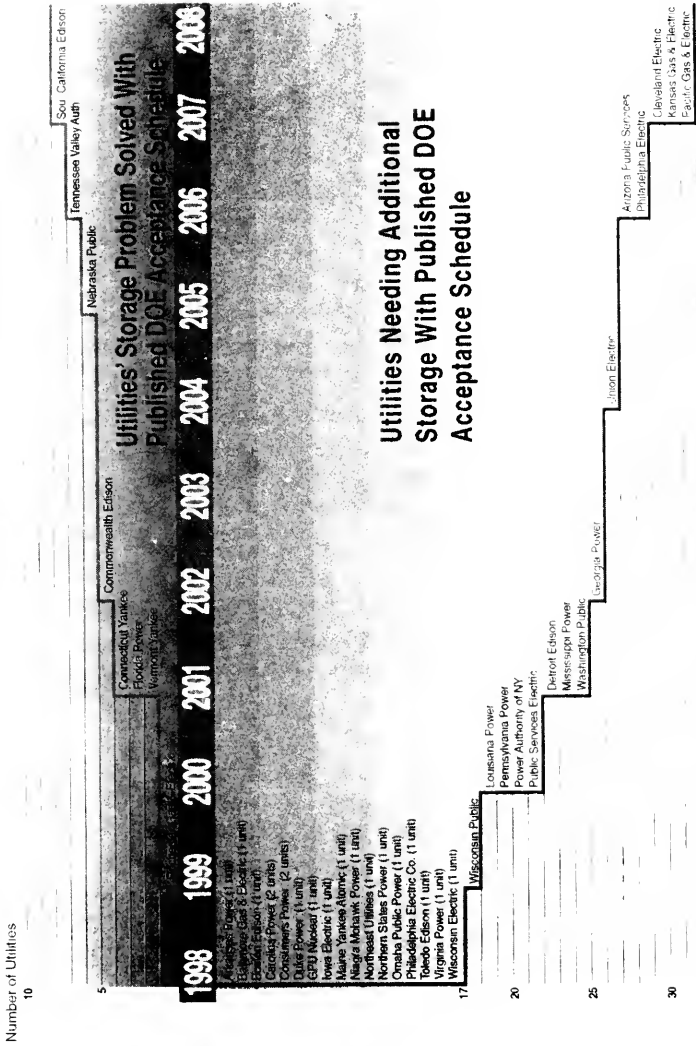
STATES NEEDING DRY STORAGE FACILITIES IN 2010

Totals for Nation

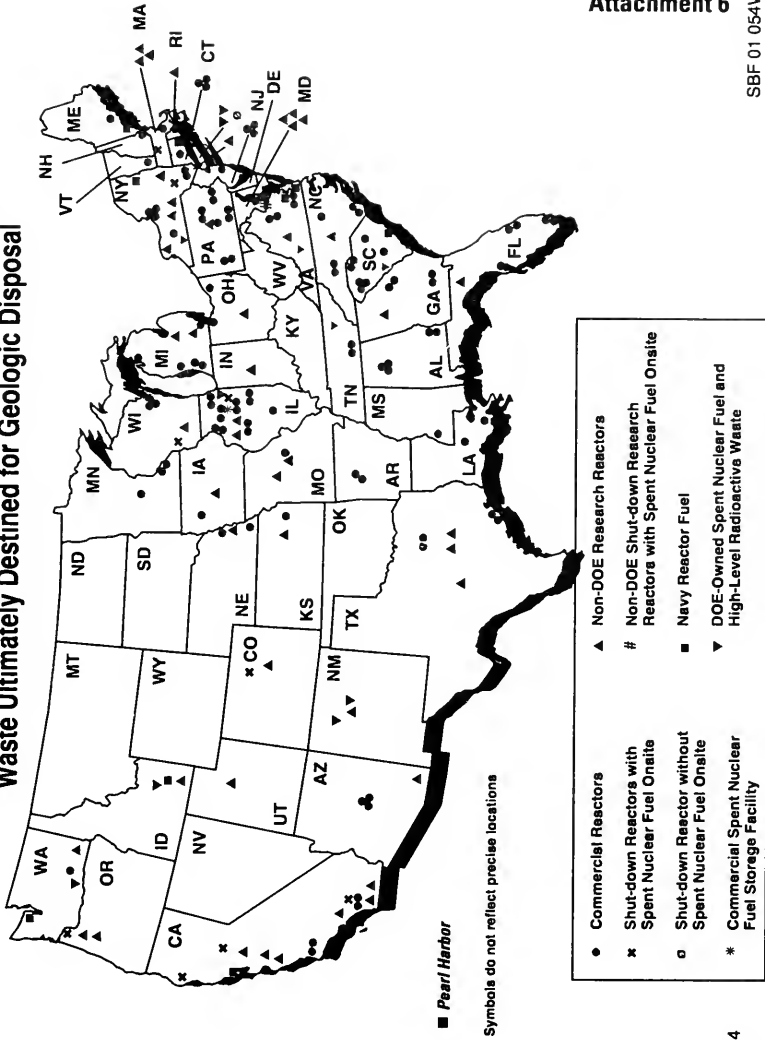
Total In Dry Storage = 12,100 MTU
32 States
59 Sites



Additional Spent Nuclear Fuel Storage Needs Based Upon DOE Beginning Waste Acceptance in 1998



Locations of Spent Nuclear Fuel and High-Level Radioactive Waste Ultimately Destined for Geologic Disposal



7/29/94

State	Commercial Reactors	Non-DOE Research Reactors	Navy Reactor Fuel	DOE-Owned Spent Fuel and High-Level Radioactive Waste
Alabama	Browns Ferry Plant 1, 2, 3 (Decatur) Joseph M. Farley 1, 2 (Dothan)			
Arizona	Palo Verde Station 1, 2, 3 (Wintersburg)	University of Arizona (Tucson)		
Arkansas	Arkansas Nuclear One 1, 2 (Russellville)			
California	Diablo Canyon Plant 1, 2 (Avila Beach) Rancho Seco Plant 1* (Clay Station) San Onofre Plant 1*, 2, 3 (San Clemente) Humboldt Bay 3* (Eureka)	University of California (Irvine) General Electric (Pleasanton) McLellan Air Force Base 1†† (Sacramento) General Atomics 1, 2 (San Diego) Aerotest Research (San Ramon)	Mare Island (Vallejo)	
Colorado	Fort St. Vrain* (Pietteville)	U.S. Geological Survey (Denver)		
Connecticut	Haddam Neck Plant 1 (Haddam Neck) Millstone Plant 1, 2, 3 (Waterford)		Knolls Atomic Power Laboratory (Windsor Locks)	
Florida	Crystal River Plant 3 (Red Level) St. Lucie Plant 1, 2 (Hutchinson Island) Turkey Point Plant 3, 4 (Florida City)	University of Florida (Gainesville)		
Georgia	Edwin I. Hatch Plant 1, 2 (Baxley) Alvin W. Vogtle 1, 2 (Waynesboro)	Georgia Institute of Technology (Atlanta)		

* shut-down reactors with spent nuclear fuel onsite
 †† status of spent fuel inventory to be determined

August 1, 1994

State	Commercial Reactors	Non-DOE Research Reactors	Navy Reactor Fuel	DOE-Owned Spent Fuel and High-Level Radioactive Waste
Hawaii			Pearl Harbor (Honolulu)	
Idaho		Idaho State University (Pocatello)	Idaho Naval Reactor (Idaho Falls)	Idaho National Engineering Laboratory/ (includes Argonne National Laboratory – West) (Idaho Falls)
Illinois	Clinton Plant 1 (Clinton) Quad Cities Nuclear Station 1, 2 (Cordova) Braidwood Plant 1, 2 (Braidwood) Zion Plant 1, 2 (Zion) Byron Plant 1, 2 (Byron) Dresden Station 1*, 2, 3 (Morris) LaSalle Station 1, 2 (Seneca) General Electric (Morris)**	University of Illinois 1, 2 (Urbana)		Argonne National Laboratory–East (Argonne)
Indiana		Purdue University (West Lafayette)		
Iowa	Duane Arnold 1 (Palo)	Iowa State University (Ames)		
Kansas	Wolf Creek Plant 1 (Burlington)	Kansas State University (Manhattan)		
Louisiana	Waterford Plant 3 (Tatft) River Bend Plant 1 (St. Francisville)			
Maine	Maine Yankee Plant 1 (Wiscasset)		Portsmouth Naval Shipyard (Kittery)	

* shut-down reactors with spent nuclear fuel onsite

** commercial spent fuel storage site

August 1, 1994

State	Commercial Reactors	Non-DOE Research Reactors	Navy Reactor Fuel	DOE-Owned - Spent Fuel and High-Level Radioactive Waste
Maryland	Calvert Cliffs Plant 1,2 (Lusby)	University of Maryland (College Park) National Institute of Standards and Technology (Gaithersburg) Armed Forces Radiobiology Research Institute (Bethesda) U.S. Army Aberdeen Proving Grounds (Aberdeen) **		
Massachusetts	Pilgrim Plant 1 (Plymouth) Yankee Rowe Plant 1* (Rowe)	University of Massachusetts (Lowell) Massachusetts Institute of Technology (Cambridge) Worcester Polytechnical Institute (Worcester)		
Michigan	Enrico Fermi 2 (Newport) Donald C. Cook Plant 1, 2 (Bridgman) Palisades Plant 1 (South Haven) Big Rock Point Plant 1 (Charlevoix)	University of Michigan (Ann Arbor) Dow Chemical (Midland)		
Minnesota	Monticello Plant 1 (Monticello) Prairie Island Plant 1, 2 (Red Wing)			
Mississippi	Grand Gulf Station 1 (Port Gibson)			
Missouri	Callaway Plant 1 (Fulton)	University of Missouri (Columbia) University of Missouri (Rolla)		
Nebraska	Cooper Plant 1 (Brownsville) Fort Calhoun Plant 1 (Fort Calhoun)	Veterans Administration (Omaha)		
New Hampshire	Seabrook Station 1 (Seabrook)			

* shut-down reactors with spent nuclear fuel onsite
 ** status of spent fuel inventory to be determined

August 1, 1994

State	Commercial Reactors	Non-DOE Research Reactors	Navy Reactor Fuel	DOE-Owned Spent Fuel and High-Level Radioactive Waste
New Jersey	Oyster Creek Plant 1 (Forked River) Salem Generating Station 1, 2*** (Hancocks Bridge) Hope Creek Generating Station 1*** (Hancocks Bridge)			
New Mexico		University of New Mexico (Albuquerque)		Los Alamos National Laboratory/Omega West Reactor (Los Alamos) Sandia National Laboratory (Albuquerque)
New York	Nine Mile Point Plant 1, 2 (Lycoming) Indian Point Plant 1*, 2 (Buchanan) Indian Point Plant 3 (Buchanan) James A. FitzPatrick Nuclear Plant 1 (Lycoming) Robert E. Ginna Plant 1 (Ontario) Shoreham Station @ (Wading River)	State University of New York (Buffalo) Cornell University 1, 2 (Ithaca) Manhattan College (Bronx) Rensselaer Polytechnic Institute (Troy)	Knolls Atomic Power Laboratory (West Milton)	Brookhaven National Laboratory (Upton) (High-flux Beam Reactor) (Brookhaven Medical Research Reactor) West Valley Demonstration Project (West Valley)
North Carolina	Brunswick Plant 1, 2 (Southport) Shearon Harris 1 (Newhill) W. B. McGuire Plant 1, 2 (Huntersville)	North Carolina State University (Raleigh)		
Ohio	Davis Besse Plant 1 (Toledo) Perry Plant 1 (Perry)	Ohio State University (Columbus)		

* shut-down reactors with spent nuclear fuel onsite

*** Salem and Hope Creek Generating Stations, NJ, are located on the same site.

@ shut-down reactor/spent nuclear fuel has been shipped to Limerick Generating Station, PA as of May 1994

August 1, 1994

State	Commercial Reactors	Non-DOE Research Reactors	Navy Reactor Fuel	DOE-Owned Spent Fuel and High-Level Radioactive Waste
Oregon	Trojan Plant 1* (Ranier)	Oregon State University (Corvallis) Reed College (Portland)		
Pennsylvania	Susquehanna Plant 1, 2 (Berwick) Limerick Generating Station 1, 2 (Linfield) Peach Bottom Station 2, 3 (Delta) Three Mile Island 1 (Middletown) Beaver Valley Plant 1, 2 (Shippingport)	Pennsylvania State University (State College)		
Rhode Island		Rhode Island Nuclear Science Center (Narragansett)		
South Carolina	H.B. Robinson Plant 2 (Hartsville) Catawba Plant 1, 2 (Clover) Oconee Plant 1, 2, 3 (Seneca) Virgil C. Summer 1 (Parr)		Charleston Naval Shipyard (Charleston)	Savannah River Site (Aiken)
Tennessee	Sequoyah Plant 1, 2 (Soddy-Daisy)			Oak Ridge National Laboratory (Oak Ridge)
Texas	Comanche Peak Plant 1, 2 (Glen Rose) South Texas Plant 1, 2 (Palacios)	Texas A&M University 1, 2 (College Station) University of Texas (Austin)		
Utah		University of Utah 1 (Salt Lake City)		
Vermont	Vermont Yankee 1 (Vernon)			
Virginia	North Anna Power Plant 1,2 (Mineral) Surry Power Plant 1,2 (Surry)	University of Virginia 1 (Charlottesville)	Norfolk Naval Shipyard (Portsmouth) Newport News Shipbuilding (Newport News)	B & W Nuclear Environmental Services, Inc. (Lynchburg)

* shut-down reactors with spent nuclear fuel onsite

August 1, 1994

State	Commercial Reactors	Non-DOE Research Reactors	Navy Reactor Fuel	DOE-Owned Spent Fuel and High-Level Radioactive Waste
Washington	Washington Nuclear Plant 2 (Richland)	Washington State University (Pullman)	Puget Sound Naval Shipyard (Bremerton)	Hanford Reservation (Richland)
Wisconsin	Point Beach Plant 1, 2 (Two Rivers) Kewaunee Plant 1 (Carlton) La Crosse* (Genoa)	University of Wisconsin (Madison)		
District of Columbia		Catholic University+		

- spent nuclear fuel anticipated to be shipped to a DOE facility in 1994.

* shut-down reactors with spent nuclear fuel onsite

August 1, 1994

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August 1, 1994

Mr. SHARP. Ms. Shishido-Topel, we are happy to hear from you now.

STATEMENT OF LYNN SHISHIDO-TOPEL

Ms. SHISHIDO-TOPEL. Thank you, Mr. Chairman and members of the subcommittee.

Many of the concerns NARUC has expressed regarding the efforts and progress of national high-level waste program will require congressional action to resolve, so we are grateful for this opportunity today.

The issues of nuclear waste disposal and interim storage are of deep concern to utility ratepayers and utility regulators for two main reasons. First, ratepayers are the primary source of revenue for the nuclear waste program and have been contributed over \$8 million—\$8 billion—into the fund and State regulators, therefore, must be very concerned about the cost-effectiveness and progress of the program.

Second, successful nuclear waste management and disposal is important for minimizing the life cycle costs of existing nuclear plants which comprise approximately 20 percent of the energy produced in the United States.

Based on these interests, the NARUC has expressed the following concerns: First, the DOE has not formally accepted its responsibility to accept spent fuel according to contracts entered into pursuant to the Nuclear Waste Policy Act beginning on January 31, 1988.

This is of concern to NARUC because this failure will harm ratepayers if, as a result, at-reactor, out-of-pool storage consequently becomes more costly to achieve or so difficult that nuclear energy plants are forced out of service or prevented from returning to service.

We have already seen in Minnesota and Michigan how the uncertainty over when and how the Federal Government will deal with spent fuel waste has greatly complicated efforts to implement dry cask storage. And we will increasingly face this problem.

Approximately 30 percent of the Nation's spent fuel pools will reach capacity by 1998, and approximately 80 percent of the Nation's pools will reach capacity by the year 2010.

The NARUC is, therefore, also concerned about the DOE's program's lack of an interim strategy. Under its new repository suitability and licensing strategy, the DOE expects the final repository to be available between 2005 and 2010, if the site is found suitable. An interim strategy, it could therefore be argued, is not critical.

It is important to note, however, that the past experience of the program has shown how difficult it is to anticipate and keep to time schedules in this first-of-a-kind project. Additionally, the NRC has still not approved the DOE's strategy, but most important, Yucca Mountain may not prove suitable.

Centralized, off-site interim spent nuclear fuel storage should be part of the DOE's overall nuclear waste management strategy. The addition of interim storage will add a measure of flexibility to the overall spent fuel management system, and as DOE data indicates, would provide for a more cost-effective and efficient waste program.

Centralized, interim storage capability would not only allow the nuclear waste management system to deal with situations where utilities are unable to develop additional at-reactor storage, but it would also provide DOE with invaluable experience with transportation, spent fuel container handling and management operations that would be relevant to operations at the final repository.

Another benefit would be increased safety and cost effectiveness as a result of standardization of procedures, operations and equipment. Finally, the development of off-site interim storage capability would build confidence in DOE's capability to ultimately perform the disposal function when the repository is ready.

Therefore, NARUC recommends the following: One, that the voluntary process, including both the public and private efforts for locating interim storage facilities, continue.

The authorization for the Office of the Nuclear Waste Negotiator should be extended and the negotiator should be given the authority to effectively negotiate off-site selection.

Second, the process and necessary legislative authority must be established expeditiously to create interim, off-site storage capability.

Third, the linkages between an MRS and a repository need to be eliminated.

And fourth, the statutory capacity of an interim storage facility should be increased to allow—increased to efficiently and effectively accommodate actual interim storage needs.

The NARUC does not believe that compensation to utilities for failure—for DOE's failure to meet schedule acceptance dates of January 31, 1998 is a proper substitute for performance by DOE as accepted. Compensation is important, but it is more productively addressed when the waste storage or disposal strategy timetable and associated costs and effect on the millage fee are better understood. For example, compensation to simply result in increasing the millage fee would be unacceptable.

A fourth concern is that ratepayer funds paid into the Nuclear Waste Fund are not being used for their intended purposes which also impedes the progress of the high-level waste program.

Although ratepayers have paid over \$8 billion into the Nuclear Waste Fund, access to and effective use of that money is constrained by the Federal budgetary and appropriations process and the situation must be remedied. Unless the Nuclear Waste Fund is free from the budgetary and appropriations constraints, ratepayer funds will continue to be misused and, equally important, the high-level waste program will be prevented from making progress toward a final repository much less an integrated waste management system that includes interim storage capability.

Finally, having said that, however, the NARUC is also concerned that existing DOE management and program structure has not achieved a high degree of cost-effectiveness and efficiency. And DOE has initiated a management and financial review to address this concern. However, DOE should also consider how best to involve the private sector in the management of the design, licensing, construction and operation of the multipurpose canister, transportation, and interim centralized storage portions of the Federal

spent nuclear fuel management system in order to provide more timely and cost-effective implementation of these efforts.

In conclusion, the NARUC believes the following are critical to the safe, timely and cost-effective resolution of nuclear waste issue: One, centralized interim storage capability and the development of a comprehensive integrate the waste management system.

Two, providing timely access to an effective use of the Nuclear Waste Fund.

Three, continue improvements to program cost-effectiveness and efficiency, including consideration of the contribution of private sector involvement to this effort. Without substantial changes to DOE's current high-level civilian nuclear waste program, NARUC fears the Federal Government will be pursuing a policy that results in indefinite storage of spent nuclear fuel with more than 100 reactor sites across the country. Such a situation could adversely affect a significant source of this Nation's energy as well as unfairly penalize ratepayers.

This is a situation that cannot be tolerated from a public policy standpoint. Congress and DOE must act to remedy the situation and the NARUC stands ready to assist in this effort.

Thank you.

Mr. SHARP. Thank you very much.

[The prepared statement of Ms. Shishido-Topel follows:]

**TESTIMONY OF THE HONORABLE LYNN SHISHIDO-TOPEL, COMMISSIONER
ILLINOIS COMMERCE COMMISSION**

Mr. Chairman and Members of the Subcommittee:

I am Lynn Shishido-Topel, Chairman of the National Association of Regulatory Utility Commissioners (NARUC) Subcommittee on Nuclear Issues/Waste Disposal and a public utility commissioner on the Illinois Commerce Commission testifying on behalf of NARUC. Many of the concerns NARUC has expressed regarding the efforts and progress of the national high level waste program will require Congressional action to resolve, so we are grateful for the opportunity to provide some input today.

The NARUC is a non-profit organization of the governmental agencies engaged in the regulation of public utilities and carriers located in all fifty States, the District of Columbia, Puerto Rico and the Virgin Islands.

I. The Ratepayer Interest in Nuclear Waste Management and Disposal

The issues of nuclear waste disposal and interim storage are of deep concern to utility ratepayers and utility regulators for two main reasons. First, ratepayers are the primary source of revenue for the nuclear waste management and disposal fund and state regulators therefore have great interest in the cost-effectiveness and success of the waste disposal program. Second, successful nuclear waste management and disposal is important for minimizing the life cycle costs of existing nuclear plants which comprise 20 percent of the energy produced in the United States. Increases in costs associated with nuclear energy can therefore significantly affect energy costs to consumers.

II. NARUC Concerns and Suggestions Regarding DOE High Level Waste Program Efforts and Progress

Based on these interests, the NARUC has expressed the following concerns and suggestions regarding the nation's nuclear waste program:

1. The Department of Energy (DOE) has not formally accepted its responsibility to accept spent fuel according to contracts entered into pursuant to the Nuclear Waste Policy Act (NWPA) beginning on January 31, 1998.

The DOE must act on its responsibility to accept spent nuclear fuel beginning on January 31, 1998. The failure of DOE to act on this responsibility will harm ratepayers if, as a result, at-reactor, out-of-pool storage becomes more costly to achieve or so difficult that nuclear energy plants are forced out of service or prevented from returning to service. This is not mere

speculation, as shown by the difficulties encountered in Minnesota and Michigan in going to dry-cask storage. An increasing number of reactors will face this problem over time if DOE does not act on its responsibility. Approximately 30 percent of the Nation's spent fuel pools will reach capacity by 1998 and approximately 80 percent of the nation's pools will reach capacity by the year 2010. In addition, for already shut-down reactors, continued at-reactor storage adds from \$4 to \$8 million to decommissioning activities.

2. The DOE program lacks an interim strategy.

Under its new repository suitability and licensing strategy, the DOE expects the final repository to be available between 2005 and 2010, if the site is found suitable. An interim strategy, it is therefore argued, is not critical. It is important to note, however, that the past experience of the program has shown how difficult it is to anticipate and keep to time schedules in this first-of-a-kind project. Additionally, the NRC still has not approved the DOE's strategy, and most important, Yucca Mountain may not prove suitable.

Centralized, off-site interim SNF storage should be part of the DOE's overall nuclear waste management strategy. The addition of interim storage will add a measure of flexibility to the overall spent fuel management system, and as DOE data indicates, would provide for a more cost-effective and efficient waste program. Centralized, interim storage capability would not only allow the nuclear waste management system to deal with situations where utilities are unable to develop additional at-reactor storage due to physical or other constraints; it would also provide DOE with valuable experience in transportation, spent fuel container handling and management operations that would also be relevant to the final repository. Another benefit would be increased safety and cost-effectiveness as a result of standardization of procedures, operations and equipment. Finally, the development of off-site interim storage capability would build confidence in DOE's capabilities to ultimately perform the disposal function when the repository is ready.

3. Compensation to utilities for failure to meet scheduled acceptance dates after January 31, 1998 should not be considered a substitute for performance by DOE as expected by electric utilities and ratepayers under the law and standard contracts.

Compensation is important but is more productively addressed when the waste storage/disposal strategy, timetable, associated costs, and effect on the millage fee are better

understood. For example, compensation that results in simply increasing the millage fee is unacceptable.

4. Ratepayer funds paid into the nuclear waste fund are not being used for their intended purposes, impeding progress of the high level waste program.

Although ratepayers have paid over \$8 billion into the nuclear waste fund, access to and effective use of that money is constrained by the federal budgetary and appropriations process. This situation must be remedied. Unless the nuclear waste fund is freed from the budgetary and appropriations process, ratepayer funds will continue to be misused. Equally important, the high-level waste program will be prevented from making progress toward a final repository, much less an integrated waste-management system.

5. Existing DOE management and program structure has not achieved a high degree of cost-effectiveness and efficiency.

DOE has initiated a management and financial review to address this concern. However, DOE should also consider how best to involve the private sector in the management of the design, licensing, construction, and operation of the multi-purpose container, transportation and interim, centralized storage portions of the Federal SNF management system in order to provide more timely and cost-effective implementation of these efforts.

III. Legislative Priorities

The NARUC is currently developing its list of legislative issues. However, the NARUC has already established the following items as requiring legislative attention:

1. Funding mechanism remedy. In 1992, NARUC adopted a resolution supporting increased funding for the high level nuclear waste program, to advance the characterization of the Yucca Mountain, Nevada site for an early, hence cost-effective, determination of site suitability or non-suitability as a deep geologic disposal facility. In 1993, NARUC adopted a resolution urging the Administration and Congress to urgently address the funding mechanism for the program contingent on the following considerations:
 - There is currently no credible evidence to suggest that there is a need to currently increase the fee paid by ratepayers of nuclear energy;
 - There is a need for continued strong Congressional oversight of the high level nuclear waste program and this oversight should entail annual reviews of the

DOE's budget request;

- Ratepayers have a right to expect that the high-level waste program will have future access to the unobligated balance of the existing Nuclear Waste Fund before the current fee is increased and therefore a methodology for securing access to that balance must be specifically set forth in any mechanism; and
- Funding should be made available to the program when needed and any such mechanism must not include incentives for denying the program available funds for Federal budgetary considerations.

2. Interim, off-site storage capability:

As I explained, centralized, interim storage will bring cost savings, added safety, and promote greater confidence in the waste program relative to leaving spent fuel at reactor sites until the repository is available. The sooner it is achieved, the greater will be these benefits. This will require the following legislative changes: 1) The voluntary process, including both the public and private efforts for locating interim storage facilities must continue. The authorization for the office of the nuclear waste negotiator should be extended, therefore and the negotiator should be given the authority to effectively negotiate off-site selection. 2) A process and necessary legislative authority must be established expeditiously by the Federal government to create federal interim, off-site storage capability. 3) The linkages between an MRS and a repository need to be eliminated. 4) The statutory capacity of an interim storage facility should be increased to allow for: A) a significant reduction in the number of reactor sites that will need to initiate dry cask storage after 1998; B) a significant reduction in the amount of spent fuel storage capacity expansion at those reactor sites already using dry cask storage by 1998; C) a significant reduction in the period of time that spent fuel must remain at reactor sites following permanent reactor shutdown; and D) acceptance of the spent fuel at a rate equal or greater than its rate of generation.

IV. Background

In recent years, State regulators' frustration over the lack of progress in the Federal waste management program has intensified. Although it was clear that the repository would be delayed, no decisions were being made regarding interim storage needs. About one year ago, the NARUC established a collaborative dialogue for interested parties to try and develop a consensus on the

appropriate approaches to the interim storage of spent fuel. A letter proposing such a dialogue was sent to Secretary O'Leary, and the response from DOE was positive.

NARUC's Nuclear Waste Program Office set up and supported the dialogue group. Those who accepted the invitation to participate included: six public utility commissioners, six nuclear utility executives, one representative from an organized environmental group, and two individuals from the State of Nevada. Individuals from DOE and NRC were invited to provide technical assistance to the dialogue, but were not participants in the dialogue process itself. The objective was to provide a forum for candid discussions among a group of interested parties.

The majority of the Dialogue Group agreed to the following principles:

- High-level radioactive waste management is the responsibility of this generation.
- Health, safety and minimization of environmental impact are the overriding priorities in managing civilian nuclear waste with other important considerations including: geographical equity, public acceptance, and cost effectiveness.
- DOE has a responsibility to take title to and to remove spent fuel from reactors beginning in 1998.
- Compensation alone would not satisfy DOE's obligation to remove spent fuel from reactor sites.
- Even though central DOE interim spent fuel storage facilities may be available, subject to the above principles, each utility should have the option to pursue storage on-site or elsewhere should it be more desirable to do so.

Based on these principles, the group agreed to the following recommendations:

- The Federal government (DOE and Congress) should take the actions necessary to establish interim, off-site spent fuel storage capability to allow the Department to take title to and remove spent fuel from reactor sites starting in 1998.
- The voluntary process, including both the public and private efforts for locating interim storage facilities, should continue.
- The Federal government (DOE and Congress) should immediately initiate a serious effort to locate an interim storage facility at one or a few existing Federal sites.
- DOE should increase the planned rate of acceptance of spent fuel from reactors and

Congress should increase the statutory capacity limits on interim spent fuel storage facilities to efficiently and effectively accommodate actual interim storage needs.

- DOE should take immediate action to ensure that the necessary infrastructure (such as transportation capability) exists and will be available to support the acceptance of spent fuel for interim storage in 1998.
- The NRC should review its regulations, and implementation of those regulations, for safety added value to ensure the cost effectiveness of interim storage facilities.

Two of the dialogue participants submitted dissenting reports, which were incorporated into the final report.

The NARUC Dialogue majority concluded that away-from-reactor storage is an essential part of an overall nuclear waste management system and is preferable to building interim spent fuel storage facilities at-reactor sites for the following reasons:

- Developing an away-from-reactor spent fuel storage capability is consistent with the principle of taking responsibility for the waste we generate and would demonstrate important progress toward solving the waste problem. It is consistent with the Congressional mandate for DOE to take title to and begin to remove spent fuel from reactor sites by 1998.
- Centralized storage facilities would provide a measure of flexibility to the overall spent fuel management system that does not now exist. It would provide an ability to deal with situations where utilities are unable to develop additional at-reactor storage due to physical and regulatory constraints.
- DOE would gain valuable experience in spent fuel container handling and management operations. This would build confidence in DOE's capabilities to ultimately perform the disposal function when the repository is ready, or identify the technical and management capability required. This situation would allow for more control to be exercised over facility sites through standardized procedures and operations.
- Operating and maintaining one or a few centrally located interim spent fuel storage facilities would be less costly and more efficient than operating and maintaining at-reactor storage facilities at over 70 sites. In addition, planning, licensing and construction of one

or a few centralized facilities would be less costly than doing this for more than 70 sites.

NARUC accepted the Report and adopted principles and recommendations by resolution on March 2, 1994 (see attachment 1). The NARUC also adopted a resolution to encourage the exploration of private temporary storage facilities (see attachment 2). On May 25, 1994, the DOE issued a Notice of Inquiry (NOI) requesting comment from affected parties on interim waste acceptance issues and the NARUC Dialogue Report recommendations. The NARUC established relevant principles in response to the NOI by resolution on July 28, 1994 (see attachment 3).

V. Conclusion

In conclusion, the NARUC believes the following are critical to the safe, timely and cost-effective resolution of the nuclear waste issue: 1) centralized interim storage capability and the development of a comprehensive, integrated waste management system, 2) providing timely access to and effective use of the nuclear waste fund, and 3) continued improvements to program cost-effectiveness and efficiency including consideration of the contribution of private sector involvement to this effort. Without substantial changes to DOE's current high-level civilian nuclear waste program, NARUC fears the Federal government will be pursuing a policy that results in indefinite storage of SNF at more than 100 reactor sites across the country. Such a situation could adversely affect a significant source of this nation's energy, as well as, unfairly penalize ratepayers. This is a situation that can not be tolerated from a public policy standpoint. Congress and DOE must act to remedy the situation and the NARUC stands ready to assist in this effort.

Mr. SHARP. Mr. Loux, we will be very please to hear from you now.

STATEMENT OF ROBERT R. LOUX

Mr. LOUX. Thank you, Mr. Chairman.

I am Bob Loux, the director of the State of Nevada Nuclear Waste Project Office for the Agency for Nuclear Projects. We are charged with the State's oversight of the Department of Energy's program. I would like to give you my thanks for the invitation today.

Mr. Chairman, as you know it has been nearly 14 years since the passage of Nuclear Waste Policy Act which followed a difficult path for many years prior to passage. Many interests needed to be balanced in an atmosphere of perceived urgency, developed largely by the nuclear power industry which foretold a coming crisis in spent fuel storage capacity in pools located at the reactor. That immediate crisis for the industry vanished with the availability of dry cask storage capability by the mid-1980s for those reactor which most needed it.

However, the legacy of perceived crisis remains today in the Act's unrealistic schedules and the Department of Energy's commitments for achieving deep geologic isolation and government acceptance of the utilities' spent fuel for disposal. This is, in part, why we are here today in the face of lawsuits by concerned States with nuclear power reactors and the nuclear power industry who want performance on the promises of the Act and the Department even though the desired performance is impossible to achieve.

It is also recognized that public confidence in the government's nuclear waste program would be a measured performance on those promises. The increasing failure to meet these promises and the continuing decline in public confidence that they will be met is another reason why we are here today.

The States' and utilities' lawsuits and the continual negative public reaction to nearly all aspects of the Federal Government's high-level waste program are a strong and persuasive statement of no confidence in both the program as it continually evolves through legislation, and the implementation of program that continually requires new legislation to meet the ever-changing objectives of the Department of Energy.

We have often said that all that remains of the original intent of the Nuclear Waste Policy Act is, A, the concept that commercial spent nuclear fuel and high-level waste will be isolated timely and permanently in deep underground disposal; and that those who use electricity resulting from the creation of these wastes will pay the government costs of the management and burial through payments of the Nuclear Waste Fund.

Both of these remaining tenets, Mr. Chairman, are now coming into jeopardy in DOE's recently announced and currently developing proposed program approach introduced this year as integral to the administration's funding proposal. The proposal first would defer the final decision on permanent underground waste isolation in a repository until as much as 100 years after the underground waste storage and repository performance confirmation.

This would add, according to DOE, more than 2 billion additional dollars of funding liability for the extended storage period. The underground storage period would end only if the site performs the standards which have yet to be established and long after rate-payer payments to the Waste Fund 2309 disposal services have ceased.

Also, of course, the proposal provides the Department to make multiple-purpose containers financed by the waste fund available at reactor sites for on-site storage of spent fuel at government rather than utility expenditure which is not authorized by the Act.

Notwithstanding the lack of alternative and additional geologic repository sites to Yucca Mountain, and the mandated future revision of long-term repository health and safety standards, written specifically for the single site being investigated, the current proposed program approach further degrades confidence in the ability to safely manage and isolate the wastes, with equitable distribution of risk and liability in a timely manner.

It relies on yet more legislative change for its implementation as planned by the Department. The additional legislative changes, as proposed and if enacted, will sound the final bell in the piecemeal demise of Congress' well-intended Nuclear Waste Policy Act of 1982 with the demise of the necessary public confidence.

Despite the Department's claims of progress in characterizing Yucca Mountain to support a suitability or nonsuitability determination and a license application, if the site is suitable, the progress shown has come largely at the expense of collection of geologic and hydrologic data fundamental to understanding Yucca Mountain long-term capability to perform as a barrier to waste isolation.

The nature of major faults which could affect the site suitability and potential for seismic events within and near the site is being discovered essentially by accident, while the attention and resources of the project are largely focused on the preparation for construction of the repository scale underground Exploratory Study Facility, whose design is continually in flux as schedule and construction priorities change.

As early as 1989, the State of Nevada provided the Department with technical evaluations which we believed should have caused the Yucca Mountain site to be disqualified as the site under the site recommendation guidelines required by the Act.

While the Department eventually responded to these points, none were substantially refuted and now the Department is in the process of determining whether those guidelines should be reinterpreted or possibly amended for specific development of the Yucca Mountain site itself.

Mr. Chairman, part of the understanding reached in the passage of the Nuclear Waste Policy Act was that interim storage of spent fuel at reactors was inevitable until the government made geologic disposal facility also available, and accepted the spent fuel for transportation to a repository for disposal.

The Act provides that the utilities have the primary responsibility for providing interim storage in such time the government can take title to their spent fuel. We believe this to be proper in the context of the provisions of the Act and have stated this position

in a Minority Report resulting from our participation on a panel organized by the NARUC.

Our Minority Report, of course, is attached to the final NARUC panel report published earlier this year. We do, however, believe if legislation is enacted that establishes a new high-level nuclear waste policy which puts the acceptance of spent fuel for disposal off to the indefinite far future, then it may be appropriate to consider including legislation to assist in the interim storage of the utilities' spent fuel, primarily to assure the continuing safety and storage of the spent fuel at reactor sites.

Central to this position is our belief that such facilities must be sited through a voluntary cooperative process, not simply naming a site and attempting to force its development.

In conclusion, Mr. Chairman, many diverse interests during the past year and a half have joined in a general call to the President for a comprehensive independent review of the national nuclear waste policy. The State of Nevada has made such a request to the President and continues to believe that such a review and recommendations which may result from it are an essential prerequisite to any future legislation on the matter of safe, fair, and effective management of spent fuel and high-level waste.

As discussed earlier, we believe the current evolved and evolving state of the original policy of the 1982 Act retains none of the elements then believed necessary to provide confidence to the many interests involved that their needs will be served.

Development of new policies responsive to the lessons we have learned in the last 14 years and the changing nature of the high-level waste problem itself is necessary now and inevitable in the near future if constructive review and changes are not now initiated. We pledge our participation in a truly constructive effort for policy revision in which we can all share confidence in its safety for current and future generations.

Thank you.

Mr. SHARP. Thank you, Mr. Loux.

[The prepared statement of Mr. Loux follows:]

STATEMENT OF
ROBERT R. LOUX, EXECUTIVE DIRECTOR
NEVADA AGENCY FOR NUCLEAR PROJECTS
NUCLEAR WASTE PROJECT OFFICE

BEFORE THE U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEE ON ENERGY AND POWER

AUGUST 3, 1994
WASHINGTON, D.C.

My name is Robert Loux. I am executive director of the Nevada Agency for Nuclear Projects, which was established in 1985 by the State Legislature to carry out the State's oversight of the national high-level nuclear waste program as required by the Nuclear Waste Policy Act. By State Law, this office represents the State of Nevada in all matters arising from the Nuclear Waste Policy Act, as amended. Prior to enactment of this statute, I directed the oversight program from the Governor's Office.

In this statement, I will try to touch on the questions which you have posed for this hearing, although not in the order presented.

It has been nearly 14 years since passage of the Nuclear Waste Policy Act of 1982, which followed a difficult path for a few years prior to its passage. Many interests needed to be balanced in an atmosphere of perceived urgency, developed largely by the nuclear power industry which foretold a coming crisis in spent fuel storage capacity in pools located at the reactors. That immediate crisis for the industry vanished with the availability of dry cask storage capability by the mid-80's for those reactors which most needed it. However, the legacy of the perceived crisis remains today in the Act's unrealistic schedules and the Department of Energy's commitments for achieving deep geologic isolation and government acceptance of the utilities' spent fuel for disposal. This, in part, is why we are here today, in the face of lawsuits by concerned states with nuclear power reactors, and the nuclear power utilities who want performance on the promises of the Act and the Department, even though the desired performance is impossible to achieve.

Other promises, both explicit and implicit in the 1982 Act, were that the waste management and long-term waste isolation provided under the Act would be safe for current and future generations, risks and benefits would be distributed equitably, and the decisions regarding risk distribution would be fair and responsive to concerns of the States and the general public. It was recognized that public confidence in the government's nuclear waste program would be a measure of performance on these promises. The increasing failure to meet these promises, and the continuing decline in public confidence that they will be met is yet another reason why we are here today.

The states' and utilities' lawsuits, and continual negative public reaction to nearly all aspects of the federal high-level nuclear waste program are a strong and persuasive statement of "no confidence" in both the program as it continually evolves through legislation, and the implementation of the program that continually requires new legislation to meet the changing objectives of the Department.

We have often said, and I believe correctly, that all that remains of the original intent of the Nuclear Waste Policy Act of 1982 is a) the concept that commercial spent fuel and high-level nuclear waste will be isolated timely and permanently deep underground, and b) that those who use the electricity resulting in the creation of these wastes will pay the governmental cost of their management and burial through payments to the Nuclear Waste Fund. Both of these remaining tenets are now coming into jeopardy in DOE's recently announced, and currently developing Proposed Program Approach, introduced earlier this year as integral to the Administration Funding Proposal.

The proposal first would defer a final decision on permanent underground waste isolation in a repository until after as much as 100 years of underground waste storage and repository "performance confirmation." This would add, according to the Department, more than \$2 billion additional funding liability for the extended storage period. The underground storage period would end only if the site performs to standards, which have yet to be established, and long after ratepayer payments to the Waste Fund for the disposal system will have ceased. Also, the proposal provides for the Department to make multi-purpose containers, financed by the Waste Fund, available at utility reactor sites for on-site storage of spent fuel - a government (rather than utility) expenditure which is not authorized by the Act.

Notwithstanding the lack of alternative and additional geologic repository sites to Yucca Mountain (1987 NWPA amendments) and the mandated future revision of long-term repository safety standards written specifically for the single site being investigated (1992 Energy Policy Act), the current Proposed Program Approach further degrades confidence in the ability to safely manage and isolate the wastes, with equitable distribution of risk and liability, in a timely manner. And it relies on yet more legislative change for its implementation as planned by the Department. The additional legislative changes, if enacted, will sound the final bell in the piecemeal demise of Congress' well-intended Nuclear Waste Policy Act of 1982, and with it the demise of necessary public confidence.

Despite the Department claims of progress in characterizing Yucca Mountain to support a suitability, or non-suitability determination, and a license application, if the site is suitable, the progress shown has come largely at the expense of collection of

geologic and hydrologic data, fundamental to understanding the Yucca Mountain site's capability to function as a reliable barrier to loss of long-term waste isolation. The nature of major faults, which could affect site suitability, and the potential for seismic events within and near the site is being discovered essentially by accident, while the attention and resources of the project are largely focused on preparing for construction of the repository scale underground Exploratory Studies Facility (ESF), whose design is continually in flux as schedule and construction priorities change.

While the Department plans to begin operational testing of its new 25 foot diameter tunnel boring machine on August 8, as late as last week serious quality assurance problems with the design of the first phase of tunnel construction emerged, which must be resolved before tunnel construction can begin. Also, last week it was learned that planned site characterization test alcoves in the first tunnel segment have been deferred until construction of the entire first phase of the tunnel is complete. Tunnel progress will be severely limited for at least the next nine to twelve months by the lack of timely purchase of needed equipment to remove rock mined by the TBM.

While construction of the underground ESF is said by the Department to be imperative for early discovery of conditions that might disqualify the Yucca Mountain site, when questioned, Department representatives have not been able to cite what conditions, if found, would lead them to believe at the time of discovery that the site should be disqualified. At the same time, factors such as gas transport through the mountain, which might lead to disqualification, are not being thoroughly studied and understood prior to tunnel construction, even though the underground construction could result in disturbances such that necessary data collection is precluded and a license application is jeopardized. The emphasis on ESF construction has also caused deferral of test drilling to understand the most prominent unexplained hydrologic feature affecting the site - a large and very steep hydrologic gradient at the north boundary of the site, which has been known for years to exist.

As early as 1989, the State of Nevada provided the Department with technical evaluations which we believe should have caused the Yucca Mountain site to be disqualified under the site recommendation guidelines required by the Nuclear Waste Policy Act. While the Department eventually responded to these our points, none were substantively refuted, and now the Department is in the process of determining whether those guidelines should be reinterpreted, or possibly amended for application to the Yucca Mountain site.

In the Proposed Program Approach, discussed earlier, the Department is planning to modify its approach to repository licensing in order to meet an expedited schedule for license

application. In essence, the plan is to seek a license with data necessary for repository operations approval, and then, during the proposed 100 year "performance confirmation" period, develop the case for the required demonstration of "reasonable assurance" of acceptable long-term waste isolation performance. The Nuclear Regulatory Commission is awaiting more information from the Department before it can determine whether this is acceptable under existing licensing regulations. Also, the Department is currently evaluating its existing plans for site characterization studies to determine which studies are needed to support this new approach, which can be deferred, and which can be eliminated. Implementation of the new plans for site characterization is intended to begin in FY 1995, as plans for future years of work continue to be developed. This new approach to site characterization and license application is also being applied to planned incremental findings about site suitability, which again are planned to focus most on operational, rather than long-term waste isolation performance. Overall, if implemented as planned, the result of the proposal will be a notable increase in uncertainty, and decrease in public confidence, in a site suitability determination by the Secretary, and any license determination by the Nuclear Regulatory Commission to permit construction and operation of a repository.

The Proposed Program Approach recognizes the need for program compliance with requirements of the National Environmental Policy Act, but it appears that the plan is to produce individual Environmental Impact Statements for elements of the program as the Department intends to implement them, with no single EIS describing the entire program, reasonable alternatives, cumulative impacts, secondary impacts, and mitigation alternatives, as required by NEPA. The so-called NEPA exemptions in the Nuclear Waste Policy Act are limited to the repository recommendation EIS, and speak only to consideration of the need for a repository and the selection of geologic disposal as the preferred disposal alternative. All other requirements of NEPA apply. The Department's proposed piecemeal approach likely will not satisfy the requirements of the law.

In a detailed discussion, the State of Nevada recently provided the Department with its position and rationale for development first of a Programmatic EIS for the high-level nuclear waste program, and then preparation of tiered EIS's for its components as they become ripe for decision. This process provides for a broad range of meaningful public participation in decision-making which is essential to public confidence. As recognized by the Nuclear Waste Policy Act, public participation is especially important in a program as complex and far ranging as management and isolation of high-level nuclear waste.

In our analysis, we discovered that it appeared the plan for near-term deployment of the multi-purpose container, prior to a repository suitability determination, was the primary impediment to development of a Programmatic EIS that serves as the basis for

overall program implementation. The significance of this discovery is two-fold: 1. It appears that the Department has decided that the Proposed Program Approach is its preferred alternative and it intends to implement it without broad public participation in the decision-making process; and 2) the Department has developed a schedule for implementation of its preferred program approach that precludes compliance with the requirements and spirit of the National Environmental Policy Act.

Part of the understanding reached in passage of the Nuclear Waste Policy Act was that interim storage of spent fuel at the reactors was inevitable until the government made a geologic disposal facility available, and accepted the spent fuel for transportation to a repository for disposal. And the Act provides that the utilities have the responsibility for providing the interim storage until such time as the government can accept title to their spent fuel. We believe this to be proper in the context of the provisions of the Act, and have stated this position in a Minority Report resulting from our participation on a panel organized by the National Association of Regulatory Utility Commissioners (NARUC). Our minority report is attached to the final report of the NARUC panel, published this year.

We do, however, believe that if legislation is enacted that establishes a new high-level nuclear waste policy which puts acceptance of spent fuel for disposal off to the indefinite far future, it may be appropriate then to consider including legislation to assist in the interim storage of the utilities' spent fuel, primarily to assure the continuing safety of the storage of the spent fuel at the reactor sites.

Many diverse interests, during the past year and a half, have joined in a general call to the President for a comprehensive independent review of national nuclear waste policy. The State of Nevada has made such a request to the President, and continues to believe that such a review, and recommendations which may result from it are an essential prerequisite to any future legislation on the matter of safe, fair and effective management of spent nuclear fuel and high-level nuclear waste. As discussed earlier, we believe the current evolved, and evolving state of the original policy of the 1982 Act retains none of the elements then believed necessary to provide confidence to the many interests involved that their needs will be served. Development of new policies, responsive to the lessons we have learned in the past 14 years, and the changed nature of the high-level nuclear waste problem itself is necessary now, and inevitable in the near future if constructive review and change are not initiated now. We pledge our participation in a truly constructive effort for policy revision in which we can all share confidence in its safety for current and future generations.

Mr. SHARP. Mr. Hudson, we are very pleased to hear from you now.

STATEMENT OF MILLER HUDSON

Mr. HUDSON. Thank you, Mr. Chairman, and honorable members.

I would like to express the regrets of Silas Cochise, tribe council member, who was taken ill Monday night. He is our project manager and would be happy to return at a subsequent date if there is an additional hearing.

I would like to thank you on behalf of our president and the Mescalero Tribal Council for this opportunity to address your committee. I am submitting for the record a copy of the remarks delivered last month by Fred Peso, vice president of the Mescalero Apache Tribe, to the Joint Radioactive and Hazardous Waste Materials Committee of the New Mexico Legislature. His statement outlines in some detail the initiative currently under way to provide temporary fuel storage at Mescalero.

I am not in a position to comment at length on the first two topics you scheduled for discussion today. The Mescalero Tribal Council has only been involved with the Federal high-level nuclear waste program for 3 years. You will hear from other witnesses better qualified to offer specific recommendations for redirecting this effort.

The Nuclear Strategy Coalition, the National Association of Regulatory Utility Commissioners, and the Nuclear Energy Institute have each given this question careful study. We are pleased, however, that all three organizations support the privatization of interim spent fuel storage.

During the past 3 years, we couldn't help noticing, however, that the high-level waste program is deeply flawed. The Mescalero Tribal Council's treatment in the voluntary MRS siting effort has been shabby. We responded in good faith to an invitation from this Congress that we consider hosting an MRS facility on tribal lands. Our expression of interest was not returned in good faith.

To the contrary, Congress reversed itself and canceled further funding. In addition, the Nuclear Waste Negotiator has not responded to the tribe's request for siting negotiations.

This flip-flopping policy caused us to pursue the construction and operation of a private spent fuel storage facility outside the Federal program. We are currently negotiating the terms and conditions that will regulate such a storage facility. The agreement we seek will guarantee jobs and revenues to the tribe, but our greatest concern is the safety and health of our people. Our utility partners share that concern.

The Federal MRS and the private spent fuel storage concepts have become a "tale of two treaties." In both cases, the goal is the same. Even the proposed facilities are much the same, but the government's process was derailed by political objections. The Mescalero-Utility initiative is likely to succeed because it is being approached with the urgency and diligence of a for-profit business venture.

You asked in your invitation to this hearing whether we believed legislation was needed to develop a private, temporary fuel storage

facility. We have been assured by the Nuclear Regulatory Commission as well as our own attorneys that no changes in law are needed. If Congress does nothing, absolutely nothing, we can license this project. I recognize, however, this may run counter to your instincts.

Let me be blunt: We are very concerned that Washington will try and help us. Our experience in this regard is very poor. I would like to put you on notice today in the strongest possible way that the Mescalero Tribal Council will vigorously oppose any legislation designed to prevent the tribe and our utility partners from constructing a private spent fuel storage facility at Mescalero.

If there are issues that need Federal attention, they are waste transportation, transportation planning and emergency response training. States will need funds to undertake these critical responsibilities, but such moneys have been slow to materialize. It is our intention to open a storage facility early in the next century. We believe communities along its designated transportation corridors should be confident of their safety and secure in their ability to respond to an incident.

But more importantly, I would like to tell you why the Mescalero Tribal Council is considering this project. Earlier this year, during his address to American Indian leaders at the White House, President Clinton said, "We must position American Indians and Alaskan Natives to compete economically as we move towards the 21st century." He then went on to add that, "strengthening tribal economies will require new thinking and the courage to change."

The Mescalero Tribal Council has demonstrated the courage to adopt new ways of thinking—it has even been willing to evaluate nuclear waste storage as a business opportunity. If we are able to reach the agreement we want with our utility partners, we will achieve three things: One, we will diversify our economy by bringing professional, high-wage jobs to the Mescalero reservation. Two, we will assure long-term prosperity for generations yet unborn. And three, we will achieve the cultural survival of our people, for it is only through economic independence that pride and self-esteem can grow.

We ask that you give us this chance. In return, we can help you solve a problem facing all Americans, the safe, secure storage of the Nation's spent nuclear fuel until a permanent repository becomes available. You will find us to be trustworthy and reliable guardians.

If you would like to see this solution succeed, we will need your help. We need you and other Members of Congress to prevent selfish, narrow interests from sabotaging this private initiative. I believe the Mescalero private storage initiative can become a model, a model that shows how private partnerships can respond to national problems without using a penny of taxpayer money.

It is ironic that it is an American Indian tribe that has become the Nation's most aggressive advocate for progress in resolving the Nation's spent fuel crisis. You have heard from and, I predict, you will hear more from opponents who whine about the Mescalero's initiative, but listen carefully. They offer no alternative solutions. For reasons we all understand, they only want to stop us.

Thank you.

Mr. SHARP. Thank you very much, Mr. Hudson.
 [The prepared statement of Mr. Fred Peso follows:]

STATEMENT OF FRED PESO, VICE PRESIDENT, MESCALERO APACHE TRIBAL COUNCIL

Thank you for the opportunity to meet with you again. Once again, we want to share with you information on our activities pertaining to the siting of a temporary storage facility for spent nuclear fuel on the Mescalero Apache lands.

Last year, I reported to you on the status of our involvement in the Federal Government's siting process for this facility. But, after 3 years of careful investigation, political interference crippled the opportunity for this Federal process to work, and to resolve a pressing national problem.

Having spent those 3 years understanding the dimensions of this national problem, the Mescaleros concluded that the Government wouldn't act. We felt it was time for private initiative to go to work. So, we invited electric utility companies who operate nuclear power plants across the Nation to meet with us and discuss how we might work together to solve this national dilemma.

That invitation quickly developed into a serious and impressive partnership. Today, the Mescaleros have become partners with a group of 30 concerned electric utility companies. We are studying how a privately funded and operated spent nuclear fuel storage facility can serve the national interest and our interests, in a timely, safe and economic manner. I am here to tell you about the status of this partnership, what we are planning, where we are going, and to discuss some of the issues involved.

First, I want to remind you that the Mescaleros are well experienced and successful in business matters. We have a strategic approach to identifying long term ventures that serve our best interests.

As part of our future-oriented business strategy, we undertook several large projects, like the Inn of the Mountain Gods and Ski Apache. We use a cautious step-by-step approach in all these projects. In addition, we are fiercely protective of our lands, our natural resources and the well being of our tribal members.

The Mescaleros have proven in each of their ventures that we weigh all the risks very carefully. And we are always fully committed to the protection of our environment and lands—this is a fundamental part of our values. Over the years, we have looked at, and rejected many business ventures because they did not meet our requirements. The long term projects we consider must be safe, produce stable income and provide economic development and job opportunities for our people.

In October 1991, the Mescaleros were the first community to respond to the U.S. Government's invitation to consider hosting a temporary, monitored retrievable nuclear fuel storage facility. We felt this project was worth investigating. Not only did we consider it, but we spent 3 years in a step-by-step evaluation of the voluntary siting process, and the facts about spent fuel storage technology and the public issues involved.

Members of the Mescalero Tribal Council have visited many nuclear power stations. We have seen, first hand, every licensed system for the dry storage of spent nuclear fuel. As a result of these visits and consultation with nuclear experts in Government and industry, we have developed a strong confidence in the soundness of the MRS concept and the need for the project.

We also understand there is an ongoing national debate about this subject, but all this debate isn't solving the problem. In fact, some people don't want the problem solved. They actually want to force the shutdown of all nuclear power stations. This could happen if these stations are unable to store additional used fuel and have no place to ship it. Others simply don't want this project. They say the nation should just wait until the Federal Government solves the problems at Yucca Mountain in Nevada. Talk to three different people and you will get six different opinions.

But, the majority of the experts involved conclude that while the debate goes on, the most prudent solution is to build an interim used nuclear fuel storage facility. This interim facility would accept and store used nuclear fuel until a permanent nuclear waste disposal site opens. They advocate an above ground facility built of steel and concrete, with the security of Fort Knox.

The Federal Government is responsible for solving this problem, but it hasn't, mostly due to politics. Taking a cue from Vice President Gore, we have "re-invented government" and determined that the private sector can do this job faster, better and cheaper than the Federal Government. But, whether or not this project is a Federal or a private initiative, it's the same basic national problem of what to do with used nuclear fuel. The design of the facility doesn't change much.

Over the past 3 years, Tribal Council members have visited many nuclear power stations around the Nation. We have inspected various methods of storage for used

nuclear fuel. We have inspected storage pools, different kinds of fuel storage containers, and how these containers are formed into larger storage facilities. We have examined used nuclear fuel shipping containers and the vehicles which transport them. We have talked with experts who manage these facilities and others who regulate them.

We are impressed with these operations and with the safety record which has been achieved. What other industry can demonstrate virtually a perfect safety record when it comes to storing and shipping a potentially hazardous substance? After many decades of shipping used nuclear fuel there have been no accidents which caused any harm to workers or the public from radiation. That perfect safety record is no accident.

Both opponents and the press have manipulated the public into thinking that used nuclear fuel is some kind of soupy nuclear garbage, tossed into the back of a garbage truck and barreling down the highway. After all, how many people can get excited by hearing that this used nuclear fuel isn't a liquid. In fact it is a tough ceramic, locked inside metal rods. And these rods are locked inside huge steel and concrete containers which can withstand virtually any possible accident. Now let's think about that safer image for a minute—Boring, isn't it?

We have learned that used nuclear fuel, while very radioactive, is safely shielded in storage and shipping containers. After years of underwater storage at a power plant, there is not enough energy left inside to melt the fuel and it is impossible for any kind of explosion to take place. The containers are entirely passive. And they are stored completely above ground and require no special cooling.

We have made the decision that the nuclear fuel storage facility we are considering must be an entirely passive operation. That means there will be no handling or repackaging of spent fuel at the facility. It's strictly a warehouse for storage of spent fuel. Fuel comes in. It sits there for years. It's shipped away. Finally, when the Federal Government solves the disposal problem, our facility ships all the fuel to them. We then tear down the facility and restore the land to the way it was. This is not a spooky, complicated or particularly dangerous operation.

Each and every aspect of the design, construction and operation of the nuclear fuel storage facility will be analyzed and must be approved by the U.S. Nuclear Regulatory Commission (NRC). Regardless of whether this facility is a Federal MRS or a privately owned storage facility, the NRC will be responsible for the same tough licensing standards and procedures. So, we have confidence that the licensing process will assure the safety of this enterprise. It is based upon the toughness of the NRC and the objective analysis it will give every aspect of this project.

And, in addition to the NRC licensing process, the project intends to adopt standards that meet the spirit and intent of state health and safety regulations.

The Mescaleros have made it clear that we are interested in hosting a temporary nuclear fuel storage facility. We are confident that the Federal Government will eventually live up to their stated responsibility and intention to open a permanent waste disposal facility for used nuclear fuel. And, we intend to do what we can to help the Federal Government open the Yucca Mountain facility on a timely basis. Nonetheless, ownership of the used nuclear fuel stored at our project will remain with the participating electric utility companies, not with the Mescaleros.

Earlier I indicated that the nuclear fuel storage project was attractive to the Mescaleros because it met several of the important elements of our long term economic development strategy.

This project offers us economic diversification, including high wages and quality employment for decades to come.

The demand for a nuclear storage facility will be stable and steady regardless of ups and downs in the Nation's economy. And it provides the kinds of jobs we want. In addition to construction, the jobs will include monitoring, security, transportation, engineering and a range of technical skills. Of course, there are also the associated infrastructure jobs which will be created as this project stimulates the local economy.

The Mescalero Apaches will not be the only ones to benefit from this project. The project will provide many benefits which will flow to our neighbors and the State. Our neighbors in the south central part of the State need an economic stimulus. Unlike the economy of the Albuquerque-Santa Fe corridor, the State's rural economy is in terrible shape. This project is a billion dollar opportunity for all of us which will strengthen the diversity and economy of the region. And let me remind you of a proven fact. In the past, the success of the Mescalero Apache business ventures has always yielded benefits for our neighbors.

One of the most important messages I want to deliver today, is that we remain committed to continue to provide you, our neighbors and the communications media with timely and accurate information about what we are doing.

This project is no longer strangled by indecision in Washington. We have real partners, real determination, real experts, and real resources. And, we are prepared to conduct real dialogue.

We have heard it said all too often, that when it comes to nuclear energy, New Mexico has done its share. Indeed, New Mexico virtually invented the nuclear age. Los Alamos designed the first nuclear weapons and detonated the first A-bomb at White Sands, a few miles from the Mescalero Reservation. We have huge nuclear research and development facilities at Los Alamos, Sandia and other installations. And, of course, we have WIPP where the Government plans to bury nuclear weapons wastes.

And let's not forget that more than half the uranium used in making nuclear fuel for commercial nuclear power stations around the Nation was mined right here in New Mexico. So yes, New Mexico has done its share, and yes, New Mexico has benefited GREATLY for doing so. The financial rewards for hosting those facilities and operations have continued to benefit the State and its people for nearly 50 years.

We wonder why it is, that the only time New Mexico public officials have said, "No more nuclear projects, New Mexico has already done its share", is when an Indian tribe proposes to become involved in this important project. The energy, talent, experience and can-do attitude of the people of New Mexico made the state a national leader in nuclear energy development. And, our project will continue this leadership. In fact, we intend to call upon the nuclear expertise at the national laboratories in New Mexico to assist us with this project.

With this rich history of benefits to the State, it is unacceptable that the door to further nuclear projects be slammed in the face of our people.

I would also like to speak about the issue of tribal sovereignty. Sovereignty, like all power, is best exercised with wisdom and respect for the interests of others. We have shown this respect. But, the Governor of New Mexico has refused to cooperate with us. Nevertheless we have taken care to keep him and his staff fully informed about what we are doing. As for respect, we must sadly point out that the Governor seems to have a double standard. He recently wrote to President Clinton opposing the Mescalero Apache Tribe's initiative. He sent copies of his letter to numerous parties, including the media. But, he failed to show the simple respect and courtesy of informing us of his action. He didn't even send us a copy of his letter.

To us, sovereignty means the right to recover from the wrongs the past have inflicted on our people, and to chart our own destiny. Sovereignty means the right of the Mescaleros to protect our modest reservation and the rights of our people. Sovereignty is the acceptance of responsibility for our people, and the undertaking of those ventures which will provide a stable future for them and their children.

It is true that the Mescaleros have much to gain from this project. But, the Mescaleros, more than any one else, are also most sensitive to any potential risks. We have not pulled ourselves up by the bootstraps during 40 difficult years of development, to risk all that we have achieved on an unsafe or imprudent venture. You can count on our own self interest as a powerful force to assure that we would not undertake a project which poses any significant risks to our people, our health, our lands, our environment or our economic resources. We pledge our continuing caution to you and our neighbors.

We know that many will continue to criticize us, and try to tell us what we can and cannot do. We also know that many will continue to distort the facts and prejudice a fair and accurate discussion of the process. For example, when reporters and critics refer to spent nuclear fuel as "nuclear garbage" and the Fort Knox-like, above ground storage facility as a "nuclear dump", that's prejudice. In the age of "politically correct" speech, one would think the PC police would blow the whistle on anyone who uses the term "nuclear garbage" or "nuclear dump." I hope everyone can get beyond this form of prejudice.

We have heard that some people around the country are saying that this project is being forced on the Mescaleros and represents an example of "Environmental Racism." Quite the contrary. We are not a naive and inexperienced tribe of easy-to-exploit Indians. We have decades of business success with substantial projects. And we are looking at this as a long term commitment, involving partners who understand and respect our goals for economic development, safety and environmental protection.

So, when it comes to our nuclear development, we expect that you will guarantee that economic equity and fairness will prevail here in New Mexico. We expect the right to make our own decisions about this project with proper regard for our sovereignty. If the Mescalero Tribal Council reaches an agreement with our utility partners, that agreement will be submitted to the Tribal membership for their approval and ratification.

For all these reasons, I believe this is a project which can help resolve a growing national problem. And in doing so, it can benefit the Mescalero Apaches, it can benefit our neighbors and it can benefit the people of New Mexico.

Thank you.

Mr. SHARP. Ms. Sanda, we are very pleased to hear from you now. Why won't we put the microphone down on your desk. Sorry, the difference in levels of table is not meant to be in any way disrespectful.

STATEMENT OF KRISTA L. SANDA

Ms. SANDA. No problem.

Mr. Chairman and members of the committee, I would like to thank you for this opportunity to be here today. I would also like to compliment you on your staff, particularly Sue Sheridan, who does an outstanding job for you and you are well served.

Mr. SHARP. Well, thank you. We think the committee is well served by her service.

Ms. SANDA. I don't do statements very well. Mostly because I generally don't like to read to people, so I am going to talk to you about some of my own experiences in Minnesota.

I am Kris Sanda, commissioner of the Minnesota Department of Public Service. I am also the liaison to the Nuclear Regulatory Commission in Minnesota. I am a member of NARUC. I am the mother of the Nuclear Waste Strategy Coalition, and I am an instigator in the lawsuit.

I also have come to have a deep and abiding appreciation and respect for the Mescalero Apache Tribe of New Mexico. I would also like to bring greetings to my colleagues on this panel as well as to all of the people in the audience who frankly know far more about this problem than I.

Mr. SHARP. Don't bank on it.

Excuse me.

Ms. SANDA. I am going to tell you two things that might be of interest. When I started this job and, believe me, I am not a professional bureaucratic. In my other life, I used to be a home ec teacher. When I started this job, I had six children and no grandchildren. I have since remarried and now have eight children and four grandchildren. So time goes on as we work on these projects.

Meanwhile, back in Minnesota, we keep paying and paying and paying into the Nuclear Waste Fund. At last count, we hit \$210 million and the clock is still running; nothing compared to what my colleagues in Illinois are going through and nothing compared to the aggregate total which is approaching with interest \$10 billion.

I do not doubt the motives of any of the people in this room and I do not doubt the ability of Congress and DOE and all of us as regulators and ratepayers to solve the problems before us, but I think we need to deal with a few facts.

When I was a little kid and I used to sit at a small table at Thanksgiving dinners, I used to get kind of tired of all the big people talking about stuff that I couldn't participate in. So I would take radish from the relish tray. I would grab the radish and I would crawl under the table. I would go to the big people at the big table and I would say when I was three and four, I am told,

"Take my radish", mostly because I just wanted them to notice that there were people sitting at the short table.

There were short people, petite people at the short table, saying, "Take my radish." Sometimes they would say "Go away, little girl. Come back when you grow up."

So I always kind of figured once we had the opportunity to pay \$210 million into a contract between our utility, Northern States Power, and the Department of Energy, that the good folks on both sides would honor that contract.

So part of what we hear about today is to stop the game of what the Mescalero have always referred to as let's pretend, to stop the game of consultants having to say they are never unemployed by saying they have a job to work on the nuclear waste problem. To stop the game of home ec teachers who really want to go back and teach home ec again, instead of trying to figure out what in heaven's name to do on behalf of the consumers in Minnesota where they take our money and they don't take our waste.

So my message today is take my radish. My radish is the nuclear waste. And as Commissioner Lynn Shishido-Topel, who I respect enormously, has very eloquently said to you this morning and as a member of NARUC, there are many prescriptions about what to do, but I think we can just get on with it.

I am a veteran of the Prairie Island dry cask problem in Minnesota, so besides the eight children and four grandchildren, I suppose I should put a few stripes on my shoulder for having to lived through the dry cask Prairie Island debacle in Minnesota. I would not wish that on any of your States.

What we saw were polarized people from the same parties, from different parties, people who have been friends for their lives long becoming bitter enemies about what should happen to the future of the nuclear industry in America. As Commissioner Topel has pointed out, what we are dealing with is 20 percent of our Nation's energy supply.

At the same time, ratepayers in Minnesota see the Department of State running the Department of Energy saying you will take spent fuel from reactors from foreign countries while our ratepayers and our nuclear utility people have paid and paid and paid in and the same Department of Energy run by good people who do care are told, "No, you can't take title to our nuclear waste because Yucca Mountain has not yet been characterized."

And then the ludicrousness of it all is the Department of Energy then enters into an NOI, a Notice of Inquiry, about does this contract mean we are really supposed to take the waste? Does this contract mean that we pay and you are actually expecting us to deliver on the contract and what do you think the problems are?

We will respond to that Notice of Inquiry because I understand the procedures, but can't we stop let's pretend? We need to get on with the problems. We need to get on with the Nation's business, and we need to get on as people of good faith from all parties and from all States on solving this together.

Yes, we do have a number of suggestions about what can be done, but first I want to talk a little bit about something that struck me as some of the good Congressmen and leaders were talking about paddling our own canoe. Prairie Island dry cask is on the

Mississippi River in the Yinolt-Mendawauken and Sioux communities.

No, we do not want forever dry cask storage on the banks of the Mississippi River and I am here as the Commissioner of Minnesota's Department of Public Service, besides saying take my radish, to honor the contract. And you in Congress have that oversight ability. Part of my solution, as I see it, is to remove the program from the Department of Energy.

Let me tell you some other advice I have had. Most people say, "Kris, talk about whatever you want, but don't talk about removing this problem from the Federal budget. Don't talk about removing this problem from the Department of Energy."

Well, that is heresy. We all know that \$10 billion is financing the national debt. We all know that the \$4 or \$5 or \$6 billion that has already been spent is gone forever. And we also know that the difference between what has been spent and what is allegedly still in the kitty really isn't there.

When I went around to our Minnesota Congressmen, all eight of them and the two Senators who were very gracious, Congressman Penny said to me, "It is gone, isn't it?" And he is right. Senator Durenberger, who came off the health finance scene to talk to me, said what a problem we have.

Senator Wellstone said to me, "You know, where we agree, we will agree and we will work together, and where we disagree, we will work apart. But on one thing we do agree, we know how much has been paid in and we know how little has been happening."

So we can all talk for a long time about what is wrong, but I know the good people at DOE. I have been to Yucca Mountain a number of times. I am impressed with the progress that they have made. When I was first there in 1990, 1991, it was popsicle sticks in front of burro holes, but those are all good in-process items that strong environmentalists want.

We all want to make sure what is probably a very dangerous project is going to be well done. Yes, Yucca Mountain is making progress. Should we just continue to throw money at it? No. Does Minnesota want to get rid of our waste and move it off to any other site without caring where it goes, no. Do we want to be part of the solution? Yes.

We think that the changes to the Nuclear Waste Policy Act, the Act which must be reopened, include funding, payments to the nuclear waste fund must be taken off budget. And may I add that in Minnesota I am going to be advocating and instigating that utility regulators who by State have charge of the mill rate that goes to the nuclear waste fund, they start advocating removing that from the rate base, removing the payments that each of the States make from the allowable rate base.

Interim storage is a change in the Nuclear Waste Policy Act that must be required. Provisions to reinstate emergency removal and delink the MRS facility from permanent repository must be implemented. Third point, licensing. Congress should implement a phased licensing approach to the MRS and to the permanent repository. And D, program management. Management for the disposal program should be removed from the United States Department of Energy and placed with a private federally chartered corporation.

You know in Minnesota, too, that we do things generally on time and under budget. What I have observed with the Mescalero project and all of the utilities that are willingly involved in that scene is they are not only moving their program ahead, it is well ahead of time and well under budget.

I would second what Mr. Hudson said on behalf of Silas Cochise. Please don't get in the way of our privatized MRS project. We believe that we are offering a solution. They are taking my radish.

Thank you, Mr. Chairman.

Mr. SHARP. Thank you very much, Ms. Sanda.

[The prepared statement of Ms. Sanda follows:]



MINNESOTA
DEPARTMENT OF
PUBLIC SERVICE

TESTIMONY OF

KRISTA L. SANDA

COMMISSIONER, MINNESOTA DEPARTMENT OF PUBLIC SERVICE
AND
FOUNDER, NUCLEAR WASTE STRATEGY COALITION

PRESENTED TO THE
U.S. HOUSE OF REPRESENTATIVE'S SUBCOMMITTEE ON ENERGY AND POWER
AUGUST 3, 1994

Chairman Sharp, members of the Subcommittee, thank you for this opportunity to present testimony regarding the Nuclear Waste Disposal Program operated by the U.S. Department of Energy (DOE). This program is of vital interest to the nation, and changes to the program are needed to ensure its ultimate success.

I have structured my testimony around the three questions posed in your letter of invitation. First, however, I would like to present some background on the problems Minnesota has faced due to the delays in the federal disposal program and the actions I have initiated in response.

BACKGROUND: THE MINNESOTA EXPERIENCE

Minnesota hosts three nuclear generating plants -- Monticello and Prairie Island 1 and 2 -- all owned and operated by the state's largest electric utility, Northern States Power Company. These plants provide 30 percent of Minnesota's electricity needs, are extremely reliable, provide emissions-free electricity, and are the state's lowest-cost electricity producers.

The holding pool for used nuclear fuel at the Prairie Island plants (PI) will run out of storage space in 1995. Without additional storage, Northern States Power (NSP) would be forced to close PI, removing 20 percent of its generating base from service. To prevent this premature shutdown, NSP proposed to construct and operate a dry-cask storage facility, whereby the oldest and "coolest" waste would be removed from the pool, placed in large metal casks, stored outside the power plant in a secured area. Following Minnesota laws, NSP sought a certificate of need from the Minnesota Public Utilities Commission (MnPUC) for its proposal.

This project was subjected to intense review over and above the license review conducted by the Nuclear Regulatory Commission. State agencies in Minnesota performed an environmental impact statement, need and cost reviews, and assessments of alternative projects that could meet the state's energy needs. Of



major concern throughout the proceedings was the viability of the federal program: would the waste generated in Minnesota ever be removed and disposed of by the federal government, as required by federal law? Would the \$210 million paid by Minnesota ratepayers ever result in a facility that met their needs? Despite these questions, after reviewing all of the evidence, the MnPUC granted limited approval of NSP's request. The rationale for limiting approval was to match the state's storage capacity with DOE's obligation to begin removing waste: granting more capacity would remove needed pressure on DOE to meet its obligation for disposal, and granting less capacity would remove the state's lowest-cost supply of electricity from service before acceptable alternatives could be developed.

Groups opposing the project -- including the Prairie Island Mdewakanton Sioux Community and a coalition of environmental organizations --- appealed the MnPUC's decision. The appeal sought a ruling that the project required approval from the Minnesota Legislature before it could proceed. The Court agreed with these parties, finding that -- because there was no assurance as to when the federal government would begin removing waste from PI -- the waste may remain in Minnesota permanently, thus requiring legislative approval.

The Minnesota Legislature considered NSP's proposal in its 1994 session. The issue was the most difficult, divisive, and contentious issue facing the Legislature for years. Despite evidence demonstrating that the project was safe, that rates would increase by up to 17 percent without the project, and that environmental damage would increase were Prairie Island replaced with other sources of electricity, approval of the project was by no means certain. In the final hours of the session, the Legislature ultimately approved the project, subject to large increases in renewable energy investments and a search for a new Minnesota site to store the waste. The Legislature's decision, however, is only a temporary solution to the problem, and all parties expect that the issue will be brought back to the Legislature in the coming years.

The situation in Minnesota -- while contentious and dramatic -- will be in no way unique. Instead, this situation will be repeated throughout the country as other nuclear plants run out of storage space and the federal government has no place to put it. Resolving the problems in the nuclear waste disposal program is essential to this nation: public policy which allows waste to continue to accumulate at the country's 72 nuclear power sites is unacceptable. The nation's ratepayers have lived up to their obligations under the Nuclear Waste Policy Act to fund the disposal program -- contributing almost \$10 billion to date. For safety, cost, and policy reasons, the federal government must meet its obligation for nuclear-waste disposal.

THE NUCLEAR WASTE STRATEGY COALITION

During my review of the PI project, I became convinced that dramatic actions would be required to ensure that the federal government fulfilled its obligations for safe, timely, and cost-effective nuclear-waste disposal. Recognizing that Minnesota would not be effective acting on its own, I sought the assistance from other states with unique interests in solving the nuclear-waste problem. Together with Michigan and Florida, Minnesota founded the Nuclear Waste Strategy Coalition, a group of state regulators, executives from nuclear utilities, and Attorneys General who work together move the program forward to successful

resolution. By bringing together diverse parties -- even traditional adversaries -- who are committed to solving this problem, the Coalition is becoming a strong force in this debate.

The Coalition implements a three-pronged action plan to bring about needed changes in the program. These actions include: holding the federal government accountable for its obligations for nuclear-waste disposal; developing and proposing solutions to the problems in the current program; and supporting and encouraging development of private storage facilities to meet pressing, immediate needs for away-from-reactor storage. By pressing forward on all fronts, the Coalition believes it can best effect change. To date, eight states are represented in the Coalition, including Minnesota, Michigan, Florida, Wisconsin, South Carolina, California, Vermont, and Illinois.

Although in existence for less than one year, the Coalition has already influenced the debate on nuclear-waste disposal. For example, the Coalition was instrumental in bringing together the Mescalero Apache Nation and Northern States Power Company to begin development of a private storage facility for nuclear waste. That project now has the support and involvement of 33 nuclear utilities. Likewise, the Coalition played an instrumental role in the recent lawsuits against DOE by the states and the nuclear utilities. Twenty-five states and fourteen utilities have joined these suits, indicating the depth of concern with the program. However, the Coalition does not only point out the flaws in the current program; instead, as detailed further below, the Coalition is committed to developing an effective program that successfully meets the nation's pressing need for nuclear-waste disposal.

RESPONSES

With that background, let me turn to the questions posed in your letter of invitation to this hearing.

1. WHAT ARE YOUR MAJOR CONCERNS ABOUT THE NATION'S EFFORTS, BOTH PUBLIC AND PRIVATE, TO STORE AND ULTIMATELY DISPOSE OF HIGH-LEVEL NUCLEAR WASTE?

My major concerns regarding the federal disposal program include: timeliness, cost-effectiveness, management oversight, and continuity. With respect to timeliness, the problems in the disposal program are well-documented: in the 12 years since Congress passed the Nuclear Waste Policy Act, there has been little progress. At this point, even DOE acknowledges that it is unlikely it will meet the 1998 date established in the Nuclear Waste Policy Act for removing waste from reactor sites, and the earliest projection for an operational repository is 2010. Clearly, the current program will not meet the needs for storage and disposal in the foreseeable future, making it extremely difficult for states to plan their energy supplies. As demonstrated by the Prairie Island situation, states will be increasingly reluctant to approve at-reactor storage space, given their citizens have already paid almost \$10 billion for disposal through payments to the Nuclear Waste Fund and the uncertainties regarding permanence.

The program fares no better in terms of cost-effectiveness. Again, these problems are well-documented. DOE has spent over \$3 billion of our ratepayers

dollars with extremely little to show for it. Cost overruns are routine, and estimates for the final cost of the program continue to rise at a rapid rate. Now, DOE is considering how to compensate for the additional costs incurred by utilities for the delays in the program. Ironically, however, DOE expects that any compensation will simply increase the overall cost of the program. In short, the program lacks sound controls over cost and effectiveness.

The problems with timeliness and cost are in my mind symptoms of a bigger problem in the program: the lack of effective management oversight. Neither DOE nor the program contractors have an incentive to complete the program in a timely manner and within reasonable costs. The disposal program must compete with other DOE programs for funding and resources, despite the fact that this program has a separate source of funding. Since many of the competing programs are higher priority for the Department, the disposal program has historically been left lacking.

The final major problem with the Nuclear Waste Disposal Program is related to the management oversight problems: the program suffers from a lack of continuity. The average tenure of the Secretary of Energy is approximately three years. A major, difficult project simply cannot be completed effectively when the leadership of the implementing organization changes on this regular basis. The program's history of "one step forward, two steps back" will continue as long as it remains in a federal agency.

In contrast, the private initiatives for temporary storage are proceeding remarkably quickly and efficiently. The main project underway is the Mescalero/Utility Private Storage Initiative, which plans to develop an away-from-reactor, temporary storage facility with the Mescalero Apache Nation in Mescalero, New Mexico. This project, which began only this January, expects to sign a contract and begin the license application process later this year. This project is also expected to be developed at one-third the cost of DOE's estimate for a Monitored Retrievable Storage (MRS) facility.

Private storage initiatives are needed to bridge the gap between utilities' need for additional storage capacity and the date by which DOE begins taking title to and accepting waste for disposal. The Mescalero project and others are needed to fill this national void and ensure a stable energy future. Unfortunately, there are those who seek to halt these projects and are willing to eliminate even the possibility of their completion through revisions to the Nuclear Waste Policy Act. Congress must have the courage to defeat such efforts and allow the current regulatory review and approval of these projects to go forward.

2. HOW WELL DO YOU FEEL DOE'S HIGH-LEVEL WASTE REPOSITORY PROGRAM IS PROGRESSING? WHAT ARE THE MAJOR PROBLEMS, AND HOW DO YOU FEEL THEY SHOULD BE ADDRESSED?

As described above, progress in the repository program is extremely slow. DOE is now assembling the tunnel-boring machine, which should increase the rate of progress in excavation. Nonetheless, the program is far behind schedule, and the recent progress is insufficient to meet revised schedules, much less to make up for lost time. The problems behind this slow progress were described above.

3. DO YOU FEEL LEGISLATION IS NEEDED TO ASSIST EFFORTS, PUBLIC OR PRIVATE, TO DEVELOP A PERMANENT DISPOSAL FACILITY (OR FACILITIES)? IS LEGISLATION NEEDED TO ENSURE THAT WASTE IS SAFELY STORED IN THE INTERIM? PLEASE OUTLINE THE CHANGES YOU HAVE IN MIND.

Legislation is needed to correct the problems and flaws in the federal program and ensure that the nation secures safe, timely, and cost-effective storage and disposal facilities. The Nuclear Waste Strategy Coalition is currently developing a proposal for introduction next Congress that would address the problems outlined above. While this proposal is still under development, it is clear that new legislation is required in the following areas:

FUNDING. Payments to the Nuclear Waste Fund must be taken off-budget to both ensure that the program receives adequate funding and protect the ratepayers' investment. Currently, the fund is not specifically dedicated to the program. Because the fund balance can be used to off-set the federal deficit, there is disincentive to provide the program with adequate funding. Further, because the program is a part of DOE's overall budget request which is subject to the Administration's and Congressional limits, the disposal program must compete against all other DOE programs -- many of which are of greater priority to the Administration -- to receive funding. As a result, the program has never been funded sufficiently to meet program milestones and legislative deadlines. Moving the program off-budget will help eliminate these problems.

INTERIM STORAGE/MRS. Because the repository will not be operational until, at best, 2010, the nation must resolve the issue of where to store waste in the interim. Private storage facilities can meet some of the interim storage needs, but do not relieve the federal government of its obligation to provide storage and disposal beginning in 1998. Immediate action is needed to develop federal storage facilities.

Legislation is required to assist this effort. First, Congress should reinstate DOE's ability to take title to and remove nuclear waste from reactor sites in emergency situations. Safe, reliable, and cost-effective nuclear plants should not face premature shutdown due to a lack of storage facilities. Reinstatement of the emergency provisions of the Nuclear Waste Policy Act would resolve this concern. Second, Congress should revise the sections of the Act involving Monitored Retrievable Storage Systems by removing the same-state restrictions and delinking (or relinking) the MRS and the repository. Together, these changes should allow the program to provide the centralized interim storage facilities envisioned in the Act.

LICENSING. Congress should consider implementing a phased approach to licensing the repository. Rather than gathering sufficient data and analysis to meet the 10,000-year safe criterion of the current license requirements, the program should be allowed to meet the requirements in phases. For example, the program could first meet a 100-year safe test for the initial license. With this approach, testing and data collection would then continue to meet the requirements for subsequent licenses for longer-term storage or disposal. Likewise, Congress should consider changing the repository from a permanent-disposal facility to an underground, retrievable storage facility. This change would allow more extensive, continual monitoring of the waste over time, and could allow retrieval of the waste in the future, should reprocessing or other technologies improve.

PROGRAM MANAGEMENT. Congress should remove implementation authority for the program from DOE and move it to a private, federally chartered corporation. By introducing a business perspective and creating a single-focus organization, this change would eliminate the program's problems with continuity and should significantly improve overall management. Congress could draw on other examples of privatized programs in structuring the new organization, looking to examples like the U.S. Enrichment Corporation and the Tennessee Valley Authority.

The Nuclear Waste Strategy Coalition is currently developing a proposal for amending the Nuclear Waste Policy Act to incorporate these recommendations. The Coalition expects to present this proposal to Congress this fall, for consideration in the next Congress.

CONCLUSIONS

The Nuclear Waste Disposal Program, while making incremental progress, is not meeting the needs of the nation. There is a growing consensus that dramatic action is needed to correct the fundamental flaws in the program. Congress should not miss this opportunity to "reinvent" government by implementing major changes to the current program. These changes will be needed for the country to develop safe, timely, and cost-effective storage and disposal facilities for nuclear waste. The nation's ratepayers, having paid almost \$10 billion for a program that continually fails to meet their needs, demand and deserve no less.

MR. SHARP. You certainly know how—I can see why the people of Minnesota turn to you for a spokesperson. We are very pleased to have all of you here. We always have a number of serious issues.

I want to recognize myself first to ask—getting at a question that Ms. Sanda and Ms. Shishido-Topel have raised about the cost and my colleagues have raised as well as the question of the legal requirement of Federal Government to take the waste as of 1998.

Dr. Dreyfus, if it is determined by the Department and lawyers and others that it is either good policy or is legally correct to take the waste in 1998, what kind of physical possibilities exist to do that? Am I right that they probably put in dry cask storage and probably put it on one of the Federal reservations that are already in existence or would you have to go through the process of trying to site such a facility?

MR. DREYFUS. Well, as you know, the history of this, of course, is that the 1982 Act required the Department to come up with interim storage and the Department did.

The Department was sued by the State of Tennessee in which that site was placed. The Department fought the suit to the Supreme Court, won the suit, and proposed the site to Congress.

The 1987 Act revoked that proposal and took away the authority to make another proposal until such time as the repository is recommended to the President. So at this point in time, the authority to site an MRS that the Department has under the Nuclear Waste Policy Act is pending action on the repository. It is not available between now and 1998.

MR. SHARP. So I understand legally Congress would have to lift that bar for you to—

MR. DREYFUS. So we have two situations. The first is to determine a site, which depends on what process is laid down and could take a very long time. It consumed several years last time to get to the Congress. If the site is designated, we have the logistical question. If you were to choose a nuclear-ready site, then I would say the logistics go something like that.

MR. SHARP. A nuclear-ready site is one?

MR. DREYFUS. One in which there is availability of facilities to manage a cask of some kind.

MR. SHARP. A current Federal facility of some sort.

MR. DREYFUS. So if you were to choose an existing licensed reactor site in which there is already a license, this would be ancillary to existing licenses, but the thing you have to consider is the license from the Nuclear Regulatory Commission and the environmental impact statement with whatever shortcuts may be provided by the Congress in the Act. In the MRS that is currently authorized in the Act, there are some advantages in that alternative sites need not be considered and alternatives to an MRS need not be considered in the Environmental Impact Statement. You have a license and you have a construction program and they will depend on the site-specific situation. Construction of something like this is a 3-year proposition. If you are looking at a grassroots plant with no additional benefits from the Congress in a policy sense, it is probably at the best 7 years. I would expect 8 if there is litigation. That is basically EIS, licensing, construction, and movement. To the extent that the site need not be constructed or that the EIS or

licensing need not be done, you can shorten it. That is basically the logistical facts of life.

Mr. SHARP. It is most likely you would use dry cask storage.

Mr. DREYFUS. Certainly. I am almost certain. Unless, of course, you were using a site that had existing pool capability, but it would not be extensive.

Mr. SHARP. Let's assume for the moment that is the path we take. I mean, several people are advocating that we get to this proposition, I think it is partly the basis of the lawsuit. How might those costs be borne? What are the possibilities? Again I realize you are not advocating for that, but that would be paid for out of the waste fund.

Mr. DREYFUS. The Nuclear Waste Policy Act contemplated interim storage to be paid for out the waste fund.

Mr. SHARP. So let me ask you this: Is it likely that there are one or two alternatives that the utility which now has it in pools would have to put it in casks at its expense or is the other alternative—are either of these set by law now I would say, or is the other alternative that the cost of that would just be borne out of the general fund so it would be shared by all utilities to transform into the casks what is in the pools?

Mr. DREYFUS. Well, the state of the art and circumstances have changed considerably since 1982. The original contemplated situation would be that the utility would have bare fuel elements in a pool and the Department would arrive with a transportation cask belonging to the Department, the fuel elements would be put in that cask and would be taken away.

The theory of the act, as I read it, the cost of managing the fuel at reactors until waste acceptance was to be done as part of the cost of doing business and included in the rate paid by the utility and the ratepayers. The cost from waste acceptance forward would be paid for by the ratepayer through the waste fund and borne by the Department out of the waste Fund.

We are now, of course, in a situation where many utilities are already moving fuel from the pool into dry storage so we are now contemplating acquiring fuel already in dry storage.

Some of that would be repackaged in the pool in order to take it away. That is one reason the Department is working on a multi-purpose canister system which would mean you would have the fuel in a canister. It would be readily transferred to a transportation overpack and taken wherever it goes. So as the technology evolves and as the requirement for dry storage evolves, it is highly likely that most of that stuff will be in a canister in dry storage when it is picked up, or at least a lot of it will be.

Mr. SHARP. What I am trying to get at is it seems to many of us and the Department seems to have the message strongly and is working on financial management in order to more efficiently use the money that is going into that fund, but everybody is looking for a way to make this cheaper among other issues working cheaper and I guess the question I wonder if anybody is analyzing closely who it is cheaper for or whether or not the cost increase for the whole system by interim storage or whether or not you are going to have a fight in Congress or at the Department on policy over which utility is going to pay.

Those that have already put into dry cask storage and are covering those costs themselves, are they going to be willing to pay into the Fund to transform out of the pools into casks to go into interim storage or is that going to stay with—were we going to have a policy in this country in which everybody has the obligation to get into dry cask storage and then, fine, you take it in 1998 or as quickly thereafter and you will put it on a reservation in one of the States that has Senators and Representatives who will object and lawsuits that will be made.

I mean, what I am trying to get at is how simple are these? I mean, the notion that we can avoid the costs, I think we can't avoid the cost. The question is how to make it most efficient and I wonder if these—they may well. It may well be the smartest thing to do and I am not advocating this is to get on with it to pick an interim storage on an existing Federal facility and get the stuff so that it becomes less of a political issue in the States, but I don't know if any analysis has been done as to what the actual ratepayer costs are in terms of the nuclear waste fund.

I think it is unlikely that Congress will let the general taxpayer pick that up given the way things have gone so far.

Mr. DREYFUS. The theory of the Act is that ultimately collective ratepayers pay all. They pay it either through the cost at the reactor or through the waste fund. That has been the theory of the act.

Now, when you get to inter-utility equity it gets to be a much more complex problem, because anything that changes the collection system imposes at-reactor costs at one utility inconsistent with others. The way that was handled in the original contracts was through a rulemaking process which had a sort of oldest fuel first concept. There is a queue that is established for picking up this fuel. It is not necessarily consistent with the economic needs, in the sense that some fuel would be picked up from utilities that have pool storage before it was picked up from utilities that will have to add dry storage. The chart that I attached to my statement shows that dramatically but it was deemed to be equitable by the utility community at the time. If we were to now change the costs borne out of the waste fund presumably one would have to go through some process to determine the equities among the utilities. That goes with whatever situation we choose. That again is part of the NOI. It is a question of how we would equitably distribute compensation for the costs of dry storage.

Mr. SHARP. And so you expect to have an analysis for the next Congress on some of those issues.

Mr. DREYFUS. Well, system costs are one thing. The allocation of system costs among utilities depends on exactly what proposed approach you are going to take.

Mr. SHARP. What I am trying to get at is I just hope we are doing enough analysis beforehand so that 3 years hence everybody isn't saying where was the cost reduction we expected and what not. I think we want to as best we can go in with our eyes open.

We are considering asking the General Accounting Office to try to just give us as good an analysis as they can about cost equity question and additional or less—cost savings if it can be made in that regard. I mean at that point, of course, then we have a two track policy going which would be that we have the Yucca Moun-

tain tracks unless the Congress should lose it and I don't hear any advocates saying let's just abandon that.

I think people—if anybody honestly in the scientific community thinks we really should, they really ought to speak up and the second track is to interim storage and it strikes me that is not likely to reduce costs. I think the real issue would be is it cheaper to keep it at reactor sites in dry cask storage or is it cheaper to centralize, if cheapness is what you want.

There is a whole other issue here which is politically that people don't want it in their backyard. The difficulty that the Department faces is that Tennessee succeeded in blocking with court suits. We just heard the eagerness of Nevadans to have this in their backyard and we still have no volunteers stepping forward except the Mescalero are willing, but they do not have their own State and this is a long-standing fight in this country. I really like your testimony about the Federal Government. The only thing I would disagree is with when you say the instinct is to act.

There are a lot of people around this town that would disagree that our instinct is inaction. It depends on the issue. But we haven't yet heard fully from the State of New Mexico on this subject, though.

I shouldn't say that because we will hear in 20 minutes from the State of New Mexico, but we have already heard from some of its Representatives and Senators on this subject and so the ease with which politically we solve that remains problematic and I just hope that the various forces in this fight understand we want to be careful we don't set up what we hope is a better track only to discover it is flawed and it fails and we need to up the costs.

Let me recognize my distinguished gentleman from Florida.

Mr. BILIRAKIS. Thank you, Mr. Chairman.

Ms. Sanda, I wish we could turn you loose on the Congress.

Ms. SANDA. I am working on it. It is amazing what we have been able to do in a short amount of time.

Mr. BILIRAKIS. It is going to take too long and the heresy is that we, in fact, avoid these questions, not that you should.

Dr. Dreyfus, as I said in my opening statement, I visited Yucca Mountain a few months ago. At the time, they were awaiting the tunnel-boring machines and they are moving very, very slowly and I think they bored into the mountain approximately 200 feet as I recall, something of that nature.

Now you have received and assembled the tunnel boring machine?

Mr. DREYFUS. Yes, sir. The 200 feet you saw was simply the starter tunnel and the machine is in the starter tunnel. We are in the shake-down phase of the machine.

Mr. BILIRAKIS. Are we still 200 feet approximately a year later?

Mr. DREYFUS. There has been no drilling, no action on the tunnel. We have received and assembled the machine and placed it in the tunnel. The only thing that has happened in the tunnel is there is a research alcove which may or may not have been there at the time of the your visit, the concrete pads that the tunnel machine will use for its first purchase to begin drilling have been built.

But basically there has been no drilling pending the arrival of the machine. That was a blasting excavation strictly as the starting

pad for that machine. That is all it was. It was not intended to be a—

Mr. BILIRAKIS. How many employees are at that location would you say approximately?

Mr. DREYFUS. Pardon me?

Mr. BILIRAKIS. How many employees are working on that approximately?

Mr. DREYFUS. Ninety Federal employees, probably 500 contract employees. Roughly half of my staff is in the Yucca Mountain site.

Mr. BILIRAKIS. What have they been doing for the last year?

Mr. DREYFUS. Well, there is a very extensive program of surface investigation going on out there.

Mr. BILIRAKIS. But that is ongoing, right?

Mr. DREYFUS. Yes, it is ongoing and it continues. There are holes being drilled and data being taken and cores being analyzed and models being built and all of the other things that are involved. In fact, of course, the State of Nevada would tell us that we should continue the surface testing for a good many more months or years before we even begin to use the tunnel machine. There were some arguments about whether the tunnel machine is the critical piece, but our technical advisors and we believe that the essential step is to get to the repository level with a machine and do testing at repository level.

That will answer many of the major questions and that is what we are doing.

Mr. BILIRAKIS. Well, I don't really intend to be critical because I know you have had problems out of your control there and will always continue to have, but at the same time, if I went out there this August, for instance—I don't have any plans to do so—would I see basically the same thing that I saw almost a year ago?

Mr. DREYFUS. I think you would be quite impressed by the tunnel machine but since most of it is now underground, one would not see it. We can give you a run-down on activities at Yucca Mountain and, in fact, there is one—a two-page summary before you that tells you what is going on at Yucca Mountain. There is an awful lot of activity out there that is unrelated to the tunnel and I commend that. I can come in and give you a briefing on it at length.

Mr. BILIRAKIS. Is there anything in your opinion causing a delay in tunneling?

Mr. DREYFUS. At this point in time, nothing. We are doing business as usual. There is nobody obstructing anything out there, if that is what you mean. I am not sure what the essence of your question is.

Mr. BILIRAKIS. That or funding, is there a funding problem?

Mr. DREYFUS. The 1994 funds for this program were not adequate to do the most work that was possible to do. I reported that to the Appropriations Committees and, in fact, stated that if the 1995 funds could not be improved, that I would come back to the Congress and tell them what program could be mounted, because it is not the one we are doing.

We were in a position for several years due to lawsuits and other things where we could not do very much at the site except occupy it and do baseline environmental studies. We now have heavy

equipment on the site and we are capable of doing more. We have drill rigs that were not operating three shifts because we don't have the funds.

We have aspects of the tunnel boring machine that had I had the funding, I would have done differently, procurement-wise. So certainly the 1994 program has been curtailed by a lack of funds. The capability was greater than the money. If in 1995 we get what we hope we can get from the Congress, we will do much better we will have a much more effective program.

Mr. BILIRAKIS. So this tunnel-boring machine will be limited when it is finally put into use. It is going to be limited to just one shift.

Mr. DREYFUS. I hope not. I await the conference on our appropriations bill.

Mr. BILIRAKIS. It depends on that.

Mr. DREYFUS. It is not my expectation that it will be limited.

Mr. BILIRAKIS. The dollars are sitting up here and making the budget look not quite as bad as it is when, in fact, the money is being collected for another use. Shame on us.

Doctor, I wonder, I hate to place the burden on you, but you are the one who is here.

Mr. DREYFUS. I probably—

Mr. BILIRAKIS. The point made by Ms. Sanda, I believe, regarding our taking spent fuel from foreign reactors could you tell us about that?

Mr. DREYFUS. There is generally highly enriched uranium, rich reactor fuel in a number of countries which was given to them under the agreements entered into through the Atoms for Peace program many years ago with the expectation that we would take that fuel back. It is Department of Energy fuel.

In the aggregate, it amounts to about 20 metric tons, which is approximately the contribution of spent fuel from a one million kilowatt power plant for one year, so it is 20 tons as compared to an annual production of about 2,000 tons from all commercial reactors.

The Department has proposed for nonproliferation reasons to take that fuel back as it becomes available and that is pretty much the facts.

Mr. BILIRAKIS. And that is as far as—well, this raises questions in your mind, doesn't it? You have enough of a problem with our own spent fuel.

Mr. DREYFUS. I recognize the difference between 20 and 70,000 tons and my problem is a 70,000-ton problem and not a 20-ton problem, so there is that difference.

Mr. BILIRAKIS. Well, there is that difference, but at the same time, we are having enough problems with our own and now we are taking some from abroad.

Mr. DREYFUS. Yes, sir. I recognize that difference as well.

Mr. BILIRAKIS. In your opinion, were there any other alternatives for nonproliferation purposes in terms of that fuel staying over there and being stored in Europe as against being taken by us?

Mr. DREYFUS. I was not a party to that. I was not a participant in that decision process, but if you are asking for my personal opinion, I think it is a good idea to take it back.

Mr. BILIRAKIS. To take it back in spite of our problems?

Mr. DREYFUS. Yes, sir.

Mr. BILIRAKIS. Mr. Hudson, again, you, too, are a breath of fresh air. Have you run into any interference on the part of the Federal Government, Congress or otherwise?

Mr. HUDSON. Yes, sir.

Mr. BILIRAKIS. You have?

Mr. HUDSON. Yes, sir.

Where would you like me to start?

Mr. BILIRAKIS. Just briefly acquaint us.

Mr. HUDSON. I will give sort of a little thumbnail history lesson. Of course, the tribe received the invitation to consider siting a Federal MRS in May of 1991 from David LeRoy, who was then the negotiator. The tribe received \$300,000 in grants through what were called the Phase 1 and Phase 2(a) portions.

In July of 1992, 2 years ago, we informed DOE and the negotiator that the tribe was ready to designate sites and the Tribal Council wished to enter formal negotiations. It was at that point in time that the entire Federal voluntary siting process came to a screeching halt from which it has never really recovered.

That was an election year, of course. The individuals who were in place at the time at DOE in the negotiator's office asked us not to rock the boat until after the election. We even went so far as to meet with Dr. Bartlett and say, "What if we submit an application anyway?"

He was direct enough to say it would remain in his "in basket" until after November, so we kind of got the drift and we waited, Fred Peso and I. I was then the project manager. He is now vice president of the tribe, came back in November and asked if they would like to do the right thing before they went to the door and they said no, we should wait for the Clinton Administration.

We came in, met with Dr. Dreyfus in February. All of these requests independently were fair and reasonable. The cumulative impact is what kills you.

Dr. Dreyfus said, "We don't even know what our policy is going to be in this area. Give us some time." Early last summer, he informed us that the President was going to name a negotiator, that they would accept an application for Phase 2(b) funding.

We filed that application. You probably are aware that what ensued then was discontent in the New Mexico congressional delegation which led to the Bingham amendment cutting off all further funds for grants for participants in the voluntary siting process, although former Congressman Stallings was confirmed as negotiator.

We met with him shortly before Thanksgiving at an American Nuclear Society meeting in San Francisco and we indicated that he felt that it would be a waste of the resources of his office to deal with an applicant that couldn't "deliver their governor" was the phrase that was used.

There is no hope that we can deliver Bruce King as an enthusiast for this project. At that point in time, the Tribal Council decided to pursue the private option.

Mr. BILIRAKIS. Since you have decided to pursue the private option, have you run into any interference?

Somebody made the comment you aren't a State. Well, you are a State, are you not?

Mr. HUDSON. Yes.

Mr. BILIRAKIS. Certainly by your reckoning, you are.

Mr. HUDSON. There will eventually, and we anticipate will be legal contention about what sovereignty means. I would like for the record to put Wendell Chino's definition of that in, which is that sovereignty is indivisible, that it either exists or it doesn't, and if you are afraid to use it, it doesn't exist.

The question then becomes it is not really whether it is nuclear waste or gaming or any other issue. It is more a matter of whether you think it is there or not.

To answer your question directly, no, we have not had any direct inference since we have gone down the privatization route. Do we expect ambushes ahead? Yes.

Mr. BILIRAKIS. I might like to suggest that you might keep this committee, whoever might happen to be the chairman or Ranking Member or members of the committee, advised on your progress, if you will.

Mr. HUDSON. We would be happy to do that.

Mr. HUDSON. On a personal note, Congressman Bilirakis, you happen to be my mother's Congressman and she said that if I got here, I should tell you that she thinks you are doing a good job.

Mr. SHARP. The program is yours.

The gentleman from Illinois, Mr. Hastert.

Mr. HASTERT. Just on a point of inquiry. Do Mescaleroes go to Florida for the winter?

I want to open up and say I really appreciate this panel for this. In my other life, I taught economics in government at a high school level. I always found, as I am in this practice, that there is probably no governmental or political decision that doesn't have an economic impact.

The only trouble is in government, there is a great deal between theory and practice and I would like to go back some day, and some of the other Members on the other side of the aisle would like to see me go back, teach economics again and maybe government, but I tell you the practice is the side that gets done.

I think that is why we have to be pragmatic and tough and move things along and not let us be distracted sometimes in the theory of what goes on. So I salute you in what you are doing and I hope you get your wish some day, but don't discount what you are doing today.

Ms. SANDA. Thank you.

Mr. HASTERT. Mr. Loux, I was interested in your part of the testimony that says "desired performance is impossible to achieve." I don't think that gives us license to put blindfolds on and say there is no problem that exists. Again, we need to move forward and make sure we can solve that problem.

Ms. Shishido-Topel, I think that you probably have some acquaintance with the public utility law, I know, in Illinois. I do, too. One of your real roles is decommissioning and having control over decommissioning trust funds for nuclear plants that are already in place is that correct?

Ms. SHISHIDO-TOPEL. Yes.

Mr. HASTERT. Do you want to pull the mike up so you are on the record?

Ms. SHISHIDO-TOPEL. Yes.

Mr. HASTERT. What are those? Over 20 years, you will probably have to preside over decommissioning one or more nuclear plants; is that not correct?

Ms. SHISHIDO-TOPEL. Yes.

Mr. HASTERT. And there is literally millions and millions of dollars in that Trust Fund to decommission those plants; is that correct?

Ms. SHISHIDO-TOPEL. That is right.

Mr. HASTERT. If nuclear waste is stored on site, do you have money to take care of that in the Trust Fund?

Ms. SHISHIDO-TOPEL. I think the question of what the actual amount that is going to be required to decommission a plant is still unclear and one of the questions or issues that we have to deal with is how best—how productively we can use ratepayer moneys to try to get enough out there but I do know that at reactor, hearing we have reactor storage will impose a greater cost of the decommissioning than if there were alternatives available.

Mr. HASTERT. The point of the law is—and I wrote the law in Illinois so I know it is—that you don't have decommissioning funds to take care of nuclear waste. Decommissioning funds are to pay to decommission plants and you know you are going to get stuck with the bill because you have no potential to deal in that, that you have no potential to deal with and your ratepayers have already paid in \$1.3 billion in Illinois to take care of the problem and we are not getting results or no promise of results.

I would guess, and maybe if you could enlighten me otherwise, you probably don't have the means to take care of that problem.

Ms. SHISHIDO-TOPEL. I would not want to disagree with you.

Mr. HASTERT. But I am just saying that is a big issue.

Ms. SHISHIDO-TOPEL. That is right.

Mr. HASTERT. What about the issue out here when we talk about optional—you know, the monitored retrievable storage issue out there? I think you said that is not an option, that option ought to be eliminated, is that correct?

Ms. SHISHIDO-TOPEL. The MRS?

Mr. HASTERT. Yes.

Ms. SHISHIDO-TOPEL. No.

I was advocating that there be interim off-site storage capability included in the Federal waste management system, that is important to achieving a more cost-effective integrated system.

Mr. HASTERT. So then if that happens, the nuclear plants and nuclear—or the electric companies in Illinois, for instance, then, would be responsible for putting that material in dry casks and the ratepayers would pick up that additional cost; is that correct?

Ms. SHISHIDO-TOPEL. The cost of putting the fuel into transport canisters?

Mr. HASTERT. Right.

Ms. SHISHIDO-TOPEL. I think the issue of how that is going to resolve depends on what developments occur in the Multipurpose Canister program because that is supposed to deal with the storage, transportation and disposal functions.

Mr. HASTERT. In your Morris site in Illinois where you have collected in a pool nuclear waste, not only from Illinois, but from all

over the, I think, Eastern part of the United States and maybe other parts of the Midwest, if those plants are decommissioned, you really have no way financially as a State to deal with the cost of that nuclear waste from outside other areas, do you?

Ms. SHISHIDO-TOPEL. If the Morris—well, that is a private site.

Mr. HASTERT. But it is full.

Ms. SHISHIDO-TOPEL. Right.

Mr. HASTERT. I mean it is only supposed to be a temporary site, right?

Ms. SHISHIDO-TOPEL. I think so, yes.

Mr. HASTERT. The fact is if you don't move toward a permanent site, that site becomes a permanent site; is that correct?

Ms. SHISHIDO-TOPEL. I would think so.

Mr. HASTERT. And that is not acceptable, is it?

Ms. SHISHIDO-TOPEL. I think that that—no, I would not think that would be acceptable.

Mr. HASTERT. I would say probably if we opened up a loophole to create more monitored, retrievable storage sites, we end up with that same trick box that we put ourselves in and we need to be very careful in that type of focus. We need to look for permanent solutions.

To talk about—somebody mentioned keeping their eye on the ball. I think I mentioned it in my own opening statement that I would like to have included in the record, but you can't keep your eye—take your eye off the ball. If you take your eye off the ball, you don't have an end solution and that is of very, very empirical importance in this issue.

We need to find the final solution. I appreciate your testimony. I think we have a lot in common on this and I look forward to working with you on this issue.

Dr. Dreyfus, a couple of things. One of the things at one site—and it is interesting you get 90 people as Federal employees and 500 contract people, you would probably get further if you gave them a pick and a shovel; we might be further along in that hole. I mean the old miners did it in the old days.

That is rhetorical; you don't have to answer.

It is interesting. You drilled 200 feet in a year and the agencies have drilled 200 miles in Texas. We may want to put the same productivity people in Nevada that we have Texas. I am not going to suggest anything more about Texas, but I am just saying that the same machinery—we know a little bit about deep tunnels in Illinois. We have used that machinery for a long time. It works; start it up. Let's go.

The temporary solution to set aside for permanent storage to me is not a solution and I think we need to be very, very careful about that. You talk about still being optimistic in 8 or 9 years having a site. I go back to the same context of keeping your eye on the ball, and I hope that is what we are doing.

You feel confident in being able to do that?

Mr. DREYFUS. I am confident that we will get the Yucca Mountain project site characterization back on some kind of efficient pace. If we get the funding to do it, we will do it. I will tell you the result of the investigation when we have the result of the investigation. We don't have it yet.

I think the program is moving now. I think that we will know a lot. We will have a technical answer to the suitability of the site by 1998, again assuming that the funding profile permits, and that I am confident of and I agree with you that the ultimate disposal is what is important and that interim storage solutions, which are important in terms of economics, certainly it being a very expensive business to run a nuclear waste pool when there is no reactor running.

For example, they are important, but they become, as I said in my statement, exceedingly difficult to deal with if you have no longer got an end game. If there is no repository, then all temporary storage becomes inherently permanent and it becomes much more difficult to deal with it.

So I agree, the repository is the thing. I expect to pursue it as the primary objective of the program.

Mr. HASTERT. Even an issue of security, I mean that is not our primary focus in this thing, but even in security, to me. It seems this stuff is nuclear waste. Some people would like to get their hands on it.

There are some people who are irresponsible in this world, maybe in this country, and if you have one site secure as opposed to 73-plus sites spread around this country, that is an issue as well, isn't it?

Mr. DREYFUS. I think nuclear waste is fairly secure because if you touch it, you die. Basically, the issue that I think is most important is it would be, I believe, unconscionable to begin to contemplate the long-term storage of nuclear waste at 72 sites. It is simply the multiplication factor of human failing over a long period of time and the management of what are really high-tech operations on nuclear sites that are no longer operating reactor sites as reactors are shut down. That is a disaster scenario and I certainly would never advocate it.

If we do not do the repository, then we should think consolidation certainly in some other kind of site, but I believe there is, in fact, an international consensus that deep geologic storage is the way to go and every country that I am aware of intends to do it.

Most of them have a program well along in that direction, though most of them are not as far as we are in the sense of having picked a particular site and a date. I think we should cling to that until somebody has a better idea. In the meantime, whatever we do with interim storage should be just that; interim.

Mr. HASTERT. Contrary to the testimony of Mr. Bilbray, I think that France is doing it and England is planning on doing it; is that not correct?

Mr. DREYFUS. There are significant differences in that most of the nuclear countries do intend to reprocess fuel so they are not putting away thousands of tons of spent fuel. They are putting away essentially the same kind of things we will get from—

Mr. HASTERT. How are they reprocessing that fuel incidentally?

Mr. DREYFUS. They are reprocessing it into mixed oxide fuels for reactors and we have chosen not to do that, so—

Mr. HASTERT. That is a permissible decision here?

Mr. DREYFUS. Yes. It isn't one at which we are looking, but we have once-through spent fuel of 70,000 to 80,000 tons, which is

what we are looking at. All of them are looking at geologic storage but some of a different commodity.

Most of them have longer time frames in which they expect to make an ultimate commitment. They are not hurrying toward the repository siting nor are they all that definitive about when they intend to actually deposit this stuff geologically. That is their plan.

Mr. HASTERT. I have suspicions there are some people out here that want to throw roadblocks in the process, partly some for NIMBY reasons, but others want to see the demise of nuclear energy and, of course, we see political movements and people trying to slow down this process because they know if they slow it down, that is the end of any nuclear age or nuclear energy in this country and we will go to other areas so I mean, that is the reason—there are many, but you need to keep again your eye on the ball.

I appreciate your testimony.

Thank you, Mr. Chairman.

Mr. SHARP. Thank you.

The gentleman from Washington, Mr. Kreidler.

Mr. KREIDLER. Thank you, Mr. Chairman.

I am tempted to say something about my previous profession as an optometrist and the role of vision—however in the interest of time, I'll just get to my questions.

Dr. Dreyfus, as you know, I have a particular interest in the DOE's cask development program. I should point out that I am very supportive of the cask concept. My main concern is finding the most cost-effective way to introduce these casks to the waste management process.

The last time I had an opportunity to talk about this before the committee, Lake Barrett of your office indicated that the current design may not include the third stage of nuclear waste management—final disposition. Has anything changed since then?

Mr. DREYFUS. Well, the essential character of this system would be to have a canister which would be used at reactors or at interim storage facilities, would be transportable with an overpack, and which could be emplaced in the repository with another form of overpack.

We will not know precisely what the characteristics, what the requirements of the repository emplacement will be, of course, until we design a waste package which, of course, rely on data coming out of site characterization. What we aspire to do is to license this system for at-reactor storage and for transportation, and to ascertain there are no pre-known reasons why it cannot be used as a part of the waste package. Understanding that one may not ultimately be able to use it, it is very clear that we can preclude its use if we are not thinking ahead so it is an effort to try to get to a universal canister that will in fact actually be emplaced.

If that can be done, it has immense advantages. If it turns out as we proceed with the repository that it can't, then we will have to go to a second generation. We seek from the Commission some consultation. I mean they can't license it for a waste package at this point but provide some consultative assurances that we haven't precluded its ability to go into the waste package. That is basically where we are.

Mr. KREIDLER. Still looks like a ways to go.

Mr. DREYFUS. No. I mean, we will design the universal canister system and we will seek specification for storage and transportation and, as I say, whatever consultative advice the Commission is willing to give us about its use in a waste package. The objective is to use in it a waste package.

Mr. KREIDLER. Let me move on. The DOE's Inspector General put out a report in March of this year which outlines some considerable concerns about the cost and viability of the program.

For example, the report found that costs had risen so dramatically that we are now paying as much as we anticipated in the 1986 program, but we are only going to get one fifth the number of casks planned. What are the reasons for that kind of rise in cost?

Mr. DREYFUS. Well, there are a number of reasons for the rise in cost, but the essence of that report was basically in my judgment a misapprehension of the way in which we managed the research project.

We started out with a number of concepts, many of which were abandoned along the way. That is basically what we set out to do. I can give you the—my office's rejoinder to that report which is in writing and I will be happy to send it to you. That takes it point by point on all issues.

Mr. KREIDLER. I would appreciate that. Obviously it points some very serious questions.

Mr. DREYFUS. I will be happy to send you the rejoinder, but I believe in that report there is a philosophical attitude that is inconsistent with any developmental project. It treats the program as though it were simply a procurement and not a research effort. So I will send you the rejoinder.

[The following information was submitted:]

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
COMMENTS ON IG-0345

Although the Office of Civilian Radioactive Waste Management generally concurs in the recommendations, it strongly disagrees with the findings which evidence a misunderstanding of the inherent nature of new technology development and the principles of cost and schedule control.

For example, the audit report states, both in the summary and on page 4, that the Office of Civilian Radioactive Waste Management will spend \$143 million on the cask development program, but will receive only 2 of the original 10 cask designs, initially estimated to cost \$26 million. There are two significant problems with this statement. First, the implication that the Office of Civilian Radioactive Waste Management expected to receive 10 cask designs is incorrect. The Office of Civilian Radioactive Waste Management undertook this high-risk developmental program because of potential payoffs in terms of higher capacities which would decrease the number of required shipments and, thereby, the aggregate cost. In addition, it was anticipated at that time that transportation casks would be required earlier in the life of the program than the Department now anticipates. Therefore, the Office of Civilian Radioactive Waste Management intentionally pursued redundancy by beginning with 10 cask designs to ensure successful development of a design for each category of cask needed (one truck cask and one rail/barge cask) in a short timeframe. This decision reflects the guidance in Section 11(d) of the Office of Management and Budget's Circular No. A-109, Major System Acquisitions, which states "Research and development efforts should emphasize early competitive exploration of alternatives as relatively inexpensive insurance against premature or preordained choice of a system that may prove to be either more costly or less effective."

It was recognized that with this program, as with any complex, high-risk technology development program, some of the original designs might prove technically infeasible or not cost-effective and thus be terminated and that, certainly, some would prove less acceptable than others as the design process proceeded. It was impossible to predict at the outset which two designs would prove most successful. Therefore, it seems unreasonable to compare only the initial cost estimate (\$26 million) for the two best cask designs (as though, with proper management, the two best cask designs alone could have been identified and funded) to the current cost estimate for the total program (\$143 million). If one compares the baselined cost of the cask system development program (\$210 million) with the current estimated cost of the cask system development program (\$143 million), it is clear that the program will likely cost significantly less than anticipated.

The second problem with the statements is that current program cost estimates are compared with initial cost estimates formulated during the preliminary design phase when very little certainty can be achieved with respect to costs -- one must have a well defined plan for achieving an objective before meaningful schedule milestones can be established and the cost of meeting

those milestones can be accurately calculated. The conceptual design phase, however, is the time when a plan for achieving the objective is developed. Department of Energy Order 4700.1, Project Management System, acknowledges this fact by not requiring the establishment of baselines until the conclusion of the conceptual design phase. A cost baseline, developed and approved by the Office of Civilian Radioactive Waste Management more than 3 years later, following the award of 5 contracts for the design/fabrication/testing of 7 cask types, constitutes the appropriate basis for cost comparisons.

In addition, the report attributes major responsibility for cost increases and schedule slips to a lack of detailed baselines which, the report alleges, resulted in failure to adequately control the cask system development program. In fact, the Office of Field Management's Infrastructure Acquisition Services Office, the Department of Energy organization responsible for project control policy and compliance oversight, verified that the cask system development Program's cost and schedule control system met or exceeded Departmental requirements for a technology development program. The main point, however, is that baselines, no matter how detailed they may be, cannot prevent cost increases and/or schedule slips. Baselines are routinely revised to accommodate management decisions that impact on baselined activities such as, in the case of the cask system development program, shifting program priorities, underfunding, and a decision to involve stakeholder/customer (for example, the public, Nuclear Regulatory Commission and industry) participation in the program. The purpose of the baseline control process is not to prevent such changes, but to ensure that necessary baseline revisions are made with full knowledge of their implications, that they are approved at the proper management level, and that they are adequately documented.

DEPARTMENTAL POSITION
ON INSPECTOR GENERAL REPORT IG-0345
FOLLOWUP AUDIT OF THE CASK DEVELOPMENT PROGRAM

We recommend that the Associate Director, Office of Storage and Transportation:

1. Recommendation.

Establish formal contingency plans in the event that cask designs and development are further delayed;

Departmental Position

Concur.

OCRWM has met with IG staff since issuance of the final report to clarify the recommendation and, as a result, OCRWM has taken the following actions to eliminate the IG's concerns. OCRWM has directed its management and operating (M&O) contractor to perform an annual review of contract performance and, if cost or schedule growth exceeds established criteria, an independent management review panel will be convened to determine the reasons for such growth and the likelihood of further growth and to provide recommendations on contract continuance.

2. Recommendation

Develop current baselines and schedules in sufficient detail to adequately control cask systems development schedules and costs; and

Departmental Position

Concur.

Existing cost and schedule baselines need to be updated to reflect current program status, and OCRWM fully intends to do so as soon as it becomes practicable. However, the Department disagrees with the implication that control of the cask development program has been inadequate. During the period when OCRWM's baselines have been in flux due to the Secretarial review of the program, delays in siting an MRS, and new strategy development, OCRWM appropriately managed the cask development program through the use of the cask systems development program (CSDP) annual work plan. At present, OCRWM is developing new baselines for the MRS Project, of which the cask system development program is an element.

3. Recommendation

Reevaluate the current status of the casks under development to determine if their continued development is justified.

The Department concurs in the intent of the recommendation, but believes it has already conducted sufficient re-evaluations since the IG audit was completed. OCRWM regularly monitors projected transportation needs and the progress of casks under development. At the development program's start, some categories of casks originally sought by OCRWM were determined to be unnecessary for pursuit (e.g., storage/transport casks were being pursued by industry and had limited appeal to the waste management program). As the program progressed, funding limits dictated choosing between competing cask design alternatives. At the time of the Inspector General's audit, a major evaluation of the General Atomics truck casks and the B&W Fuel Company's rail cask was being conducted. This evaluation, conducted by an independent review group established by the program, was cited in the audit report. As a result of this evaluation, the program conducted a more detailed study of the rail cask development activities. OCRWM is in the process of acting upon those findings at this time.

Mr. KREIDLER. Given the costs of cask development, wouldn't it have been cheaper to go with some of the designs that are already in existence rather than going back and reinventing the wheel?

Mr. DREYFUS. Well, there are no designs in existence that are certifiable for the uses we have in mind and that have given any consideration to the long term deposition in the repository.

Mr. KREIDLER. Is that because of the disposal issue or because of the storage and transfer?

Mr. DREYFUS. There are designs that are under certification that could conceivably serve at-reactor storage and transportation. They are in progress. They do not seek to retain the ability to be put in the repository and that basically is the difference.

Mr. KREIDLER. You are saying there are no casks out there right now that could be certified at this point to meet—

Mr. DREYFUS. I am not saying they are not out there that could not be certified. There are. There are some in the pipeline that might be certified for dual purpose and, in fact, we have participated in developmental efforts to develop dual purpose casks.

Mr. KREIDLER. If the potential exists out there for some that might be certified already that have been developed, I guess I fail to understand just exactly why, given the huge amount of cost that is involved here, questions that have been raised by the IG, and the enormous private investment, we are not investing more time and effort into existing designs.

Mr. DREYFUS. We contend basically that is what we are doing. We are not abandoning the knowledge. There is an RFP on the street in which we would assume people that have the existing knowledge and the existing systems will compete and will in fact design this effort.

I do believe that the effort to come to a universal design that has the ability to be put into the repository is a valuable effort and we would be criticized if we didn't do it. It has a system aspect to it that needs to be addressed.

Mr. KREIDLER. That same report indicated that DOE's casks aren't going to be ready by January of 1998. When DOE has an obligation to do something with the spent fuel, have you considered turning to already licensed casks which are in operation around the country to help meet that goal?

Mr. DREYFUS. Well, we hope to have the universal canister available to the marketplace in 1998. We have no decision as yet as to what the Department's role is going to be as a supplier of canister for at-reactor storage. Certainly to the extent the Department gets a role, either assumes one or is given one by Congress, we will use the technologies that are available at the time. We do have a target to have this technology available at that time.

Having been in this business, in and out of government, for 40 years, I am never absolutely sure of anything, but the target is for it to be available to the marketplace when we need it.

Mr. KREIDLER. The concern I have is the Department is spending \$143 million right now to more or less do the same thing that already exists.

Mr. DREYFUS. I must contend it is not doing what already exists, but I will provide the response that we made to the IG for your—

on the management aspects and the selection of the transportation cask.

Mr. KREIDLER. I am sure you are aware that there is some debate on that point.

Mr. DREYFUS. Yes, sir. I probably have heard it all, yes.

Mr. KREIDLER. The IG also strongly suggests that there is a need to reevaluate the current status of casks under development for the purpose of justifying further development. I support the efforts of DOE to reevaluate its cask acquisition policy, but I am concerned that DOE has not been willing to evaluate whether the casks are cost-effective.

Why does the Department continue to spend money on this program without any justification for further development of these casks?

Mr. DREYFUS. I believe we do have a justification for development of the casks both in terms of system economics and in terms of the advantages of not repackaging this fuel.

Mr. KREIDLER. One last question on another topic. As you know, I introduced legislation on the topics here somewhat to allow local port authorities more control over the shipment of nuclear waste through their communities. While this concern is more related to foreign spent fuel, I am wondering what types of transportation plans there may be for civilian high-level waste and whether any of those plans might include transport by sea?

Mr. DREYFUS. Well, we have ongoing activities with the States and discussions and coordination with other parts of the Department of Energy that actually transport waste at the present time.

We have not selected routes and we have not proceeded to the operation phase of transportation because it tends to require some near-term knowledge about what you are going to do and when you are going to do it. Also there are some matters as training and that sort of thing which obviously don't have a long shelf life.

We will, as we near the end of this process, be doing more work on transportation. I may be—unless I am tapped on the shoulder, I do not know of any seaborne transport of spent fuel, in the commercial program.

Shoreham Fuel did, in fact, move by barge and we do have intermodal consultation so there was some—and I have been tapped on the shoulder. We are not apt to be doing a lot of business in the deep water ports.

Mr. KREIDLER. On the last point—the IG disagrees with whether there is adequate justification for continued development of the casks at DOE and to say the least I look forward to your response to that report. Obviously in these very tight budget times, if there isn't a very good explanation, it is obviously going to bring some very serious questions about the direction the Department is headed right now.

Thank you, Mr. Chairman.

Mr. SHARP. Thank you very much.

Ladies and gentlemen, I would love to spend more time with you and, Mr. Hudson, I want to make it clear that I was not choosing between the sovereignty of your tribe and the sovereignty of the State of New Mexico. The Supreme Court may have to figure that one out.

In general, I say more power to the tribes, but we are very pleased to have your time and attention to this. I can't resist saying that I think there is a fundamental question here that on the financial end that money is being raised by the ratepayers. It is then appropriated by Congress.

I am not sure it was ever explained here what happens. The Fund is built up on a regular basis out of the ratepayer system and the Fund was set up to pay for this particular program, but in fact, it is appropriated on an annual basis so more money is being collected on a current basis than is being spent on a current basis.

That may make sense. There are future costs that have been collected now when there is a chance to collect, but at the same time, there is a deep suspicion. There is a reluctance of appropriators to move as rapidly as we ought to on the program commitment and I think is really a central issue here as to how to save money, we will pursue with perhaps the General Accounting Office, if not others trying to help generate the database which perhaps your organization, NARUC or others, Ms. Sanda, may have already done an analysis of and we would appreciate having it to try to determine what if any additional costs or savings there are to this question of the Federal Government accepting the fuel.

It may well be both its legal and moral obligation is to do so and politically that may be what the States want to do, but it may also be that it costs more money and there may be voices that want to know. That is where that proposition occurs because it will be the ratepayers that will pay that cost.

Ladies and gentlemen, thank you so much for your time and attention. We will take a 5-minute break as we set up the table for our next panel and maybe people can get a breath of fresh air as a result.

[Brief recess.]

Mr. SHARP. The committee now welcomes our third panel of witnesses. We are pleased to have with us Dr. John E Cantlon, the chairman of the Nuclear Waste Technical Review Board; Mr. Samuel Skinner, president of Commonwealth Edison Company, and not a foreigner to the Federal establishment, so he might not wish to claim that connection; and Mr. Bill Magavern, the director of Public Citizen with the Critical Mass Energy Project.

Gentlemen, you all have had many occasions before Congress before and you are familiar with our process. We will be happy to hear your oral summary at this time. It is too bad we can't keep the door open, but for noise reasons, we need to close it. But for fresh air purposes, we will give a minute here for our audience to get back in. They were desperate for fresh air, too.

All right.

Dr. Cantlon, we will be very pleased to hear from you now.

STATEMENTS OF JOHN E. CANTLON, CHAIRMAN, NUCLEAR WASTE TECHNICAL REVIEW BOARD; SAMUEL K. SKINNER, ON BEHALF OF THE NUCLEAR ENERGY INSTITUTE; AND BILL MAGAVERN, DIRECTOR, PUBLIC CITIZEN, CRITICAL MASS ENERGY PROJECT

Mr. CANTLON. Chairman Sharp, members of the subcommittee, I am John Cantlon, chairman of the Nuclear Waste Technical Re-

view Board. With me today is another member of the board, Dr. Donald Langmuir who is a geochemist, if we get any geochemical questions, we will refer them to him.

We are pleased to be here to provide the board's perspective to the challenges facing the civilian radioactive waste management program.

With your permission, Mr. Chairman, I will briefly summarize my written statement and give you a full text for the record.

As you know, largely as a result of the leadership and efforts of Chairman Sharp, Congress created the Nuclear Waste Technical Review Board as part of the 1987 amendments to the Nuclear Waste Policy Act. At that same time, Yucca Mountain Nevada was chosen for characterization for its suitability for locating a high-level nuclear waste repository.

The Board was charged with reviewing the technical and scientific validity of all of the activities undertaken by the Department of Energy related to the Civilian Radioactive Waste Management program, including characterizing the Yucca Mountain site.

The board is required to report to Congress and to the Secretary of Energy at least two times a year. In the last 5 years, we have reported to Congress on 10 separate occasions.

Mr. Chairman, you have asked hearing participants to respond today to three questions related to the DOE efforts to store and ultimately dispose of radioactive high-level waste. We are pleased to provide our technical perspectives on progress and our concerns related to the program. In addition, I will comment briefly on the board's thinking about possible legislative proposals.

The board's charter is a technical one. However, as it has become clear to us, that in many cases a thorough technical evaluation must include an understanding of the institutional factors, such as budget and schedule constraints, that these affect the technical and scientific aspects of the program.

For example, for the past several years, it has been proposed a comprehensive set of the site-characterization activities that were driven by a very ambitious schedule and the expectation of large budget increases. However, with each new budget cycle, important technical and scientific work was deferred while the backlog of funding of the OCRWM has said that it needed to be increased.

Last fall, when Dr. Dreyfus took over as Director of the Office of Civilian Radioactive Waste Management, he and his people recognized that problems had been created by the previous approach. They began to develop a plan to address these problems. The plan they came up with includes a number of efforts referred to collectively at the proposed program approach.

We don't know much yet about the details of this new approach. They are promised to us in the first year in September and in the outyears a year later. So it is impossible at this time for the board to make a technical assessment of the PPA. However, we can say that from what we know there appear to be certain risks as well as certain opportunities associated with this new approach.

Among the risks is the increase in technical and scientific uncertainty that would result from having more—having less data and less analysis being provided up front for the DOE's site suitability

determination and even perhaps later for its application to the NRC for a license to construct.

The potential opportunities include a chance to much better focus and to streamline the program and to demonstrate progress by achieving clear near term goals and also to sharpen up the DOE NRC relationship.

The board believes that it can make the most meaningful contribution to the development of this new approach as it evolves by reiterating perhaps now some of the fundamental and still relevant scientific and technical recommendations that we have made in past years.

First, to expedite the determination of site suitability, we have recommended that under ground exploration be undertaken as soon as possible. Getting underground to look at the site's complex geology is critical at determining whether the site is suitable for repository development. The board remains concerned about continuing delays in the excavation of the exploratory facility.

Second, look at the management of high-level radioactive waste as an interim system and to set priorities accordingly. Using a systems view that is based on a coherent waste isolation strategy becomes even more critical if a process is now going to be used that provides less data and analysis prior at a applying to the NRC for a license to construct the repository. Misjudgments, if they are made, could become more difficult and time consuming and even more costly to correct.

Third, we need to set realistic schedules for achieving important intermediate milestones such as getting under ground and determining the site suitability. Although schedules are vital to maintain program momentum and measure progress it is important that technical and scientific activities that previously were considered critical are not truncated or eliminated simply to meet arbitrary schedule deadlines.

We believe that unrealistic schedule deadlines serve only to nurse the frustration and erode confidence when they are missed.

Fourth, to increase the resources available for research and development of a robust long-lived waste package. The use of engineered barriers, including a robust long-lived waste package may help to reduce the uncertainties and to enhance the long-term safety of a repository system. It appears the OCRWM plans to increase funding for waste package development, a move that the board strongly endorses.

Fifth, allocate program funds so that more money goes to the scientific and technical work and less to the indirect overhead and infrastructure costs. Provide a coherent organizational structure to enhance the effectiveness of the people and organizations involved in the program.

Dr. Dreyfus has already completed a reorganization of the Federal personnel at OCWRM headquarters and at the Yucca Mountain Site Characterization Office and has indicated that in the future, a greater share of the available funds will be going to scientific and technical work than to overhead and related costs and the board hopes that these changes that are initiated will have the intended result.

Now, I would like to respond to the subcommittee's invitation to comment on possible legislative action. The board views its role as one of providing technical and scientific information to policy-makers as they make important policy decisions. Consequently, the board has not taken any formal position on the need for legislative action.

At the appropriate time, one area that Congress may want to look at is the adequacy of the funding for the very long term testing monitoring and possible retrieval once the waste has been emplaced. Again in the interests of safety, adequate funding should be guaranteed during the full retrievability period, both to complete the extended testing that DOE has indicated will be a part of the new program approach, and also to cover the costs of retrieving the waste should that be needed.

In closing, I would like to repeat that until the specifications of the OCWRM new program approach have been developed and the board has an opportunity to review them, we will not be able to address the technical and scientific implications of the PPA. However, we ask that there appear to be both potential risks and opportunities associated with some aspects of the DOE's proposed program approach.

We feel that the current OCWRM leadership should be commended for recognizing the fundamental inconsistencies that have existed during the past several years among the scheduled money and amount of research and analysis required to defend site suitability and licensing decisions.

We also think that changes to the program would best be evaluated within the context of how they will affect the waste management system using a coherent waste isolation strategy.

Finally, Mr. Chairman, on behalf of other board members and myself, I would like to convey our appreciation for your leadership on the issues related to in vital national program as well as your personal interest in and support of the board's work.

Thank you. We would be happy to respond to questions.

Mr. SHARP. Thank you very much, Dr. Cantlon.

[The prepared statement of Mr. Cantlon follows:]

STATEMENT OF JOHN E. CANTLON, CHAIRMAN, NUCLEAR WASTE TECHNICAL REVIEW BOARD

Chairman Sharp and members of the subcommittee.

I am John Cantlon, chairman of the Nuclear Waste Technical Review Board. With me today is another member of the Board, Dr. Donald Langmuir. We are pleased to be here to provide the Board's perspective on challenges facing the civilian radioactive waste management program.

As you know, largely as a result of the leadership and efforts of Chairman Sharp, Congress created the Nuclear Waste Technical Review Board in the 1987 amendments to the Nuclear Waste Policy Act. The Board's charge is reviewing the technical and scientific validity of activities undertaken by the Department of Energy related to the management of spent nuclear fuel and some defense high-level radioactive waste. These activities include packaging, transporting, storing, and disposing of the waste as well as characterizing a site at Yucca Mountain, Nevada, to determine its suitability as a location for a permanent underground high-level waste repository.

Mr. Chairman, you have asked hearing participants to respond to three questions related to efforts to store and ultimately dispose of radioactive high-level waste. Some aspects of your questions are outside the technical purview of the Board, but we are pleased to provide our perspective on progress and our concerns related to the program. I also would like to outline some basic principles that we have articu-

lated in the past that can provide guidance for the DOE as it develops its revised approach to site characterization and repository development. In addition, I will comment briefly on the Board's thinking about legislative proposals.

The Board's charter is a technical one. However, as the Board has conducted its review of the civilian radioactive waste management program during the past 5 years, it has become clear to us that in many cases a thorough evaluation of the technical and scientific aspects of the program must include an understanding of the institutional factors that are affecting them. Those institutional factors include schedule and budget constraints, and the question of when and how the DOE can accept spent nuclear fuel from nuclear utilities.

Scheduling and budget considerations have significantly affected the direction, scope, and quality of the civilian radioactive waste management program since it was initiated by Congress in 1987. For the past several years, the OCRWM proposed a comprehensive set of site-characterization activities that were driven by very ambitious schedules and an expectation of large budget increases. Despite this, the DOE did not ask for or receive the resources it said were necessary to accomplish the job it set out for itself. Furthermore, a large share of the money it did receive went to fund overhead and infrastructure rather than direct project costs. Consequently, with each new budget cycle, important technical and scientific work was deferred, while the backlog of funding the OCRWM said it needed increased along with the balance in the Nuclear Waste Fund.

On several occasions, the Board drew attention to the fundamental inconsistency inherent in the relationships among the work the OCRWM said needed to be done, the resources being allocated to do the work, and the optimistic schedule the OCRWM had established for completing the work. The Board suggested that the DOE make three changes: (1) establish a waste management system with set priorities and intermediate goals; (2) allocate more money to scientific studies and less to overhead and infrastructure costs; and (3) set realistic target dates for achieving important intermediate goals, such as beginning underground excavation and testing and determining site suitability.

Last fall, when Dr. Dreyfus took over as Director of the Office of Civilian Radioactive Waste Management, he and his staff recognized that problems had been created by the previous approach; they began to develop a plan to address these concerns. The Board commends the DOE's recognition of these problems as well as the willingness of current OCRWM leadership to tackle a job made more difficult by years of overly optimistic budget projections and unrealistic schedule deadlines.

To try to address these problems, the OCRWM has proposed a number of efforts referred to collectively as the proposed program approach or PPA. As yet we do not know much about the details of the PPA, but as presented at our last OCRWM briefing, the basic elements of this new approach include: (1) beginning to provide multipurpose canisters or MPC's to utilities by 1998 for on-site waste storage; (2) focusing Yucca Mountain site-characterization activities on the early determination of site suitability; (3) extending the period of waste retrievability; and (4) eliminating or deferring some testing until a confirmatory testing phase that would begin after a license is obtained from the NRC to construct the repository.

The specifics of this proposed approach are still evolving. As a result it is not possible at this time for the Board to make a technical assessment of the PPA. However, we can say that from what we know now, there appear to be risks as well as opportunities associated with this new approach. Among the risks are the increased technical and scientific uncertainties that would be created because less data and analysis than previously planned would be provided "up front" for determining site suitability and for applying to the NRC for a license to construct a repository. The potential opportunities include another chance to better focus and streamline the program and to demonstrate progress by achieving clear, near-term goals.

The Board will review the details of the PPA as they become available—the fiscal year 1995 plan should be available in September, the out year plans by next fall. In the meantime, to make a meaningful contribution to the development of this new approach as it evolves, it may be most useful for the Board to reiterate some of the fundamental and still relevant technical and scientific recommendations it has made during the past several years and to note OCRWM's intent in so far as we can.

First to expedite the determination of site suitability, begin underground exploration and testing as soon as possible. The Board first made this recommendation in 1991, and it remains pertinent. Getting underground to look at the site's complex geology is critical in determining whether the site is suitable for repository development. As we understand it, current plans call for beginning full operation of the tunnel boring machine in January of 1995. To have any chance of completing underground excavation by the dates in the current schedule and initiating key long-term

tests at the repository level operation of the tunnel boring machine should commence as soon as possible. The most expeditious and cost-effective tunneling approach requires around-the-clock work shifts with as little interference from other activities as possible. This approach is standard practice in the construction industry.

Second, look at the management of high-level radioactive waste as a system and set priorities accordingly. In the past, program plans and activities have not been well integrated. Furthermore, the DOE has not given adequate consideration to the interdependent nature of the elements of the waste management system, from the generation of the waste through its storage, transport, and ultimate disposal. Using a systems view—based on a coherent waste isolation strategy—becomes even more critical now if a process will be used that increases reliance on postemplacement confirmatory testing—as opposed to providing comprehensive data and analysis prior to applying to the NRC for a license to construct the proposed repository. Misjudgments, if they are made, might not be recognized until a later date, which could make them much more difficult, time consuming, and costly to correct.

Third, set realistic schedules for achieving important intermediate milestones such as getting underground and determining site suitability. Although schedules are vital to maintain program momentum and measure progress, it is important that technical and scientific activities that previously were considered critical are not truncated or eliminated simply to meet arbitrary schedule deadlines. The Board understands the DOE's desire to demonstrate program progress and deal with perceived contractual obligations, but we believe that *unrealistic* schedule deadlines serve only to increase frustration and erode confidence when they are missed. Another concern is that the current schedules allow little time to accommodate the kinds of surprises that have been encountered worldwide in underground projects, once underground excavation has begun.

Fourth, increase the resources available for research and development of a robust, long-lived waste package. Since it issued its first report in March 1990, the Board has underscored the importance of research related to the development of engineered barriers, including a robust, long-lived waste package, to help reduce uncertainties and enhance the long-term safety of the repository system. It appears the OCRWM plans to increase funding for waste package development—a move the Board strongly endorses.

Fifth, allocate program funds so that more money goes to scientific and technical work and less to indirect overhead and infrastructure costs. Provide a coherent organizational structure to enhance the effectiveness of the people and organizations involved with the program. Dr. Dreyfus already has completed a reorganization of Federal personnel at OCRWM headquarters and at the Yucca Mountain Site Characterization Project Office and has indicated that in the future a greater share of available funds will be going to scientific and technical work than to overhead and related costs. However, the number of contractor organizations still seems quite large and growth in staffing has continued. It remains unclear how successful the DOE will be in eliminating the duplication of effort that seems to have occurred in the past. The Board hopes the changes that have been initiated will have the intended result.

Now, I would like to respond to the subcommittee's invitation to comment on possible legislative action. The Board views its role in this area to be one of providing technical and scientific information to policy makers as they make important policy decisions—such as the need for legislative changes. Consequently, the Board has not taken a position on the need for legislative action. The Board can of course evaluate the technical and scientific implications of legislative proposals if and when they are introduced.

At the appropriate time, one area the Congress may want to look at, given the new program approach, is the adequacy of funding for very long-term testing, monitoring, and possible retrieval once the waste has been emplaced. As part of our technical and scientific evaluation of the program, the Board has discussed the need to ensure that, in the interest of safety, adequate funding be guaranteed during the full retrievability period both to complete the testing the DOE has indicated will be part of its new program approach and to cover the costs of retrieving the waste for any purpose.

In closing, I would like to repeat that until the specifics of the OCRWM's new program approach have been developed and the Board has an opportunity to review them, we will not be in a position to assess the technical and scientific implications of the PPA. However, we do feel that the current OCRWM leadership should be commended for recognizing the fundamental inconsistency that has existed for the past several years among schedule, money, and the amount of work that needs to be done. Furthermore, there appear to be potential opportunities associated with

some aspects of the DOE's proposed program approach; for example, emphasizing site suitability, setting priorities, and reallocating funds to focus on the development of a long-lived waste package and on other important scientific work. An improved interface between the DOE and the NRC also could be a benefit of this midcourse correction to the program.

On the other hand, we would like to caution that the basis for setting priorities should be a waste management systems approach that includes a coherent waste isolation strategy—not just a sorting out of how much testing can be done given time and budget constraints. The Board also will be taking a close look at the greater uncertainty inherent in the PPA's licensing approach and the timetables that have been established to complete important site-characterization activities, including underground excavation and testing and the determination of site suitability.

And finally Mr. Chairman, on behalf of the other Board members and myself, I would like to convey our appreciation for your leadership on issues related to this vital national program as well as your personal interest in and support of the Board's work. You will be missed.

Thank you.

Mr. SHARP. Mr. Skinner, we are very pleased to hear from you now.

STATEMENT OF SAMUEL K. SKINNER

Mr. SKINNER. Thank you, Mr. Chairman. I would ask that my formal remarks be made part of the record.

I am here not only as president of Commonwealth Edison, which is our Nation's largest nuclear operator, operating 12 nuclear units, providing about 75 percent of the nuclear power for northern Illinois, but on behalf of the nuclear industry which generates 20 percent of our Nation's electricity representing 56 utilities in 35 States.

We also want to commend and thank you for your leadership on this and wish you the very best as time goes on and hope you will be involved somehow in this issue, although I am not so sure that you won't find others more practical.

We more than welcome your involvement in the beginning of what I think will be a very serious assessment by the Congress as well as the industry of what we consider in our industry to be probably our biggest, single biggest long-term challenge. The long-term storage and disposition of spent fuel may represent our biggest challenge and the biggest challenge to our ratepayers.

I don't have to tell this committee or members of the committee or anybody in this room that the Nation's high-level waste management program has been plagued by fits and starts since the early days of commercial nuclear programming.

The early Carter Administration interagency review nor successive administrations' efforts to implement the Nuclear Waste Policy Act of 1982 and the subsequent amendments, as you know, has been—they have been unable to address in a timely fashion the technical challenges that have been presented as well as the complex political dynamics that surround this issue and we have seen a little bit of that today.

It is clear that the stakeholders in this process are dissatisfied and demand change and the fact that you can put a coalition together of such varied interests that recognize that something must be done and are urging that something be done is an example of how serious the problem has gotten and that we must move quickly.

We believe that the Federal Government has a clear responsibility to begin accepting spent nuclear fuel beginning in 1998. We believe it is not only a moral obligation, but a legal obligation.

As you know, we have begun to pay for many years into a fund at one mill per kilowatt hour. We have lived up to our side of bargain spending, almost \$10 billion with interest into the Fund. We have relied and planned as our ratepayers have, as our regulators have, that the Federal Government will live up to its responsibilities.

It is clear in our view that a large part of our Nation's current dilemma stems from the fact that while the Nuclear Waste Policy Act and its 1987 amendments have articulated an appropriate policy for the safe geological isolation and disposal of spent fuel in an underground repository, the process or system that can lead to that end point has never been consistently or clearly articulated.

The ultimate and continues to be the well thought-out goal, of a deep geological safe disposal repository, remains valid today, but we must establish an integrated management system to guide us to that ultimate destination. We believe an integrated system must have at least four components and a central facility for permanent disposal, and we must continue to fund and move on that process in as expeditiously as possible obviously meeting all of the regulatory and safety requirements that are necessary.

We also must have a central facility for interim storage until the permanent facility is ready. If we don't do that, by the year 2010, we will be storing spent fuel in and high-level radioactive waste on 56 sites affecting 80 units.

Today if you look at projections by the year 1998 when the Federal Government is to fulfill its responsibility, we will have 26 site disposal or site repositories in effect.

Number three, we must have a transportation infrastructure to move the spent fuel from reactor site to the storage and disposal facilities.

Four, we must have a waste packaging system that integrates all of the elements of the program. It would be a shame to design one portion of this program and find that the other portion of the program finds such a system, a packaging system is unacceptable. Remove one of those components and you lose the safety and efficiency benefits of integration.

Unfortunately, that is where we stand today because the Department of Energy does not have nor does it plans to build a central interim storage facility. The need to develop an integrated management system becomes more critical with time as more and more utilities are faced with the need to expand on site capacity.

Indeed, notwithstanding the added financial cost to customers, a number of utilities already have been forced to add dry cask storage capacity and we have seen that this step also creates and carries unacceptable high political costs and we heard some of those already today.

Mr. Chairman, precipitating battles on a State-by-State basis is not what Federal policy should be all about and unfortunately time is of the essence, where, as difficult as they are today, these issues will get more complex as time goes on.

Faced with the prospect of paying twice to the Federal Nuclear Waste Fund and for on-site storage capacity for spent fuel, 17 utilities and 44 agencies in 28 States have become involved in similar but separate lawsuits against the Department of Energy. This step was only taken as really a step of last resort indicating the frustration and the concerns of a number of people of varied interest.

Thirty-three companies are also examining the facility of joining a private storage facility that we heard about, the Mescalero Apache tribe facility in New Mexico. The lawsuits and the Mescalero project testified to the enormous frustration among State regulators and nuclear utilities with a program that is badly out of focus.

A number of your congressional colleagues, Mr. Chairman, have indicated recently that Congress must take a fresh look at how the Federal Government should manage spent fuel. Regardless of one's opinions on nuclear power, it matters little whether we build new nuclear plants in years ahead, although I hope for the sake of this country and the planet that we do.

The fact is we have 109 reactors operating in this country providing about 20 percent of our electricity and all producing spent fuel, it is up to us who enjoy the benefits of that electricity to manage the by-products. We cannot simply dump this problem in our children's lap.

We urge the Congress to direct the Energy Department to proceed without delay to assess, design, and implement the elements of an Integrated Waste Manage program, including a central interim spent fuel storage facility, and the infrastructure required to transport fuel from nuclear power plants to the facility beginning in 1998. If there is no sufficient authority under existing law for DOE to accomplish this initiative, Congress should provide DOE the authority to do so.

In developing an integrated system, it is of vital importance that DOE demonstrate continued progress in the scientific study of the Yucca Mountain site. To its credit, the Department has restructured the Office of Civilian Radioactive Waste Management and the Yucca Mountain Project Office to enhance management of the project and has streamlined its approach to site characterization at Yucca Mountain to meet current program milestones.

It is absolutely essential that those milestones commission of a licensed application in 2001 and the start of operations in 2010 do not slip further.

In conclusion, we believe the Federal Government has a clear responsibility to begin accepting spent fuel starting in 1998. Making prompt action on developing an integrated spent fuel program imperative. That integrated system is essential and it must include centralized interim storage and continued work on the characterization of Yucca Mountain as a disposal facility.

The safe isolation of spent nuclear fuel is a critical environmental issue facing our Nation, maybe our biggest. The United States simply must make progress in resolving this issue and the nuclear industry stands ready to continue to work with the Congress and other members of the administration in achieving this result.

Thank you.

Mr. SHARP. Thank you very much, Mr. Skinner.

[The prepared statement of Mr. Skinner follows:]

STATEMENT OF
SAMUEL K. SKINNER
PRESIDENT, COMMONWEALTH EDISON CO.

PRESENTED ON BEHALF OF THE
NUCLEAR ENERGY INSTITUTE

Mr. Chairman, members of the subcommittee, my name is Samuel K. Skinner. I am president of Commonwealth Edison Co., which owns and operates 12 commercial nuclear units. Nuclear energy generates approximately 75 percent of the electricity Commonwealth Edison requires to serve 3.3 million customers in Chicago and Northern Illinois.

I am here today on behalf of the Nuclear Energy Institute. NEI is the trade association of the commercial nuclear industry. Among its 369 members are utilities, nuclear fuel cycle companies, engineering/construction firms, nuclear plant equipment suppliers, and suppliers of radionuclides and radiopharmaceuticals. We represent the operators of all 109 nuclear power plants in the United States.

On behalf of the nuclear industry, we want to first express our appreciation to you, Mr. Chairman, and to the subcommittee for your interest in the Department of Energy's high-level waste program, and for your willingness to explore various spent nuclear fuel management issues as we approach the 1998 deadline for the federal government to begin accepting used fuel from utilities nationwide. We join many others in expressing our gratitude to you for your many years of energy policy leadership and in wishing you the best in whatever you choose to do after your retirement.

Mr. Chairman, it is probably not necessary to tell this subcommittee that the nation's high-level waste management program has been plagued by fits and starts since the early days of our commercial nuclear program. Neither the Carter Administration's interagency review nor successive administrations' efforts to implement the Nuclear Waste Policy Act of 1982 (NWPA), and that act's 1987 amendments, have been able to address both the technical challenges and complex political dynamics that surround this issue. While a review of the nation's effort to address spent fuel management might be an interesting historical exercise, it ultimately brings one to an inescapable conclusion: all stakeholders in the process are dissatisfied and demand change.

If you remember nothing else from our remarks today, we hope you will remember this: We believe the federal government has a clear responsibility to begin accepting spent nuclear fuel beginning in 1998. Lawyers could, and undoubtedly will, spend a great deal of time debating the legal intricacies of whether DOE has a legally binding obligation to accept spent nuclear fuel starting in 1998. However, one fact remains. Since 1983, nuclear utilities have been paying a one mill per kilowatt-hour fee to fund federal management of spent nuclear fuel based on a good faith expectation that the federal government had accepted the responsibility to begin taking spent fuel from nuclear power plant sites. We have held up our side of the deal. DOE must now do the same.

The Department of Energy has recently stated it probably will be unable to meet its 1998 responsibility absent a significant shift in program direction. We would suggest that is exactly what this subcommittee should consider: a realignment or refocusing of the program that recognizes the need for a more robust spent fuel management program and fulfills the federal government's responsibility to begin accepting spent fuel in 1998.

Congress Must Review Spent Fuel Management Program

Five years after Congress passed the NWPA, it had to revisit the legislation because the DOE program was experiencing significant scheduling delays and cost overruns. In the seven years since Congress last amended the law, the federal government's projected date for repository operation has continued to slip, from 1998 to 2010. Moreover, continued widespread concerns about the program's cost have prompted Energy Secretary Hazel O'Leary to initiate a comprehensive financial management review.

The Nuclear Waste Policy Act and its 1987 amendments articulated an appropriate policy for geologic isolation and disposal of spent nuclear fuel in an underground repository. But the process or system that can lead to that end point has never been as consistently or clearly articulated. The ultimate goal--deep geologic disposal--remains valid today, but we must establish an integrated management system to guide us to that destination.

An integrated system has at least four components: a central facility for permanent disposal, a central facility for interim storage until the permanent facility is ready, a transportation infrastructure to move spent fuel from reactor sites to the storage and disposal facilities, and a waste packaging system that integrates all elements of the program. Remove one of those components, and you lose the safety and efficiency benefits of integration. Unfortunately, that is where we stand today because the Department of Energy does not have--nor is it planning to build--a central interim storage facility. Likewise, although management has begun integrating transportation waste packaging and disposal programs through a multi-purpose canister (MPC) system, further integration of these program elements promises additional benefits. We respectfully suggest that Congress provide DOE the guidance and direction needed to fill the gaping hole in the spent fuel management program and use this opportunity to develop a robust spent fuel management system.

As you consider this issue, please remember that based on repeated promises from the federal government, utilities that built nuclear power plants expected spent fuel to be shipped off-site either for reprocessing or storage at a DOE facility. Utility spent fuel storage facilities were never intended to provide life-of-plant storage capacity. Consequently, unless DOE starts accepting spent fuel in 1998, 26 reactor sites will exhaust existing spent fuel capacity. By 2010, when a repository is expected to begin operation, 80 units will be out of space. Continued delay in the Energy Department's program to accept spent fuel will subject utility customers to significant added costs for additional interim storage capacity at plant sites.

Notwithstanding the added financial cost to customers, a number of utilities already have been forced to add dry cask storage capacity. And, we have seen that this step also carries unacceptably high political costs. We saw evidence of that earlier this year during a bitter battle in the Minnesota Legislature over a request by Northern States Power to add dry cask storage at its Prairie Island Station, one of the best-performing, lowest-cost plants in the country. Although the utility obtained the necessary regulatory approval for the facility, a small, but vocal group of antinuclear activists exploited the utility's effort to safely store spent fuel to hold a hostile referendum on the future of nuclear power in that state.

Precipitating these battles on a state-by-state basis is not what federal policy intended. It is not fair to expose utility ratepayers and state legislatures to this kind of highly charged conflict, and it is avoidable. As difficult as they are today, these issues will only get more complex.

Faced with the prospect of paying twice--to the federal Nuclear Waste Fund and for on-site storage capacity for spent fuel--17 utilities and 44 agencies in 28 states have become involved in similar, but separate, lawsuits against the Department of Energy. Those lawsuits ask the court to rule that DOE must begin to accept spent nuclear fuel beginning in 1998. Thirty-three companies are also examining the feasibility of joining a private interim storage venture by the Mescalero Apache Tribe in New Mexico. The lawsuits and the Mescalero project testify to the enormous frustration among state regulators and nuclear utilities with a program that is badly out of focus, and with an agency that is unwilling--or unable--to fix it.

Despite continuing efforts, the nuclear energy industry and state regulators have been unable to fix the problem. Moreover, after repeated assurances from a succession of Energy secretaries that DOE would start accepting spent fuel in 1998, the department issued, in May, a Notice of Inquiry essentially admitting that DOE will not meet its responsibility and soliciting comments on how to best solve the dilemma. Quite frankly, we are running out of time to determine a solution. Only Congress can take the appropriate steps to set this program back in the right direction, because only Congress represents all those with a stake in this issue.

Mr. Chairman, a number of your congressional colleagues have indicated recently that Congress must take a fresh look at how the federal government should manage spent fuel--regardless of one's opinion on nuclear power. It matters little whether we build new nuclear plants in the years ahead or not--although I hope, for the sake of this country and this planet that we do. The fact is: we have 109 reactors operating in this country, providing about 20 percent of our electricity, and producing spent fuel. It is up to us, who enjoy the benefits of that electricity, to manage the byproducts. We cannot simply dump this problem in our children's laps. And we must exercise our best judgment in crafting a solution to this issue, mindful of the fact that technological advancements in the future could have a dramatic impact on how the nation manages spent nuclear fuel 100 years into the future.

An Integrated System Is Needed

Let me put things in perspective on the economics of spent fuel management, and how utility customer bills would be affected by the failure to have an integrated system operating by 1998. According to industry models of DOE data, nuclear utility ratepayers would be forced to pay an additional \$5 billion in 1993 dollars for on-site spent fuel storage over the life of the system if an integrated federal system that allows for the centralized management of spent fuel is not operating by 1998 and the permanent repository opens in 2010. That's a total of \$35 billion for spent fuel management.

If the permanent repository schedule slips beyond 2010 and no integrated system has been put in place, costs to consumers will soar. For example, should the repository begin operating in 2020, not having an integrated system that provides DOE with the means to meet its 1998 responsibility would result in at least \$40 billion being expended for spent fuel management. That's about \$10 billion more than the cost of an integrated spent fuel management system.

Integrating interim storage and the permanent repository would thus save customers money and provide for timely off-site spent fuel storage. An integrated management system, which incorporates centralized storage, would also provide an added margin of safety to the current program. Congressional leaders who drafted the original NWPA recognized the need for integration in the high-level waste program. In fact, it is clear that the program as currently structured has not met expectations in that regard.

Earlier this year, the National Association of Regulatory Utility Commissioners (NARUC), whose members consists of all the individual state public utility commissioners, organized a dialogue to evaluate and make recommendations about realistic options for interim spent fuel storage prior to the operation of a repository. During the course of that process, a new consensus in integrated spent fuel management began to emerge. First, the majority of participants in the NARUC dialogue concluded that "centralized off-site interim storage of spent fuel is far preferable to on-site storage at reactor sites throughout the country." In addition, NARUC said DOE has the responsibility to move spent fuel off nuclear power plant sites beginning in 1998, should immediately initiate an effort to locate interim storage on federal property, and should acknowledge that compensation to utilities alone--without moving spent fuel--does not satisfy DOE's 1998 responsibilities.

The effort by NARUC, which passed a resolution restating these principles last week, is an important first step in mapping a reasoned approach for refocusing the nations spent fuel management program in an integrated manner. The Nuclear Energy Institute's Executive Committee passed a similar resolution in March.

Congress must establish once and for all DOE's responsibility to take possession of, and title to, spent nuclear fuel by a date certain. No nuclear plant

should be forced out of service or prevented from returning to service because of the federal government's inability to begin accepting spent fuel by 1998.

As the NARUC dialogue revealed, leaving fuel at nuclear power plant sites, while technically feasible, is unacceptable as a federal spent fuel management policy. The cost of building a central interim storage facility would be substantially less than the cost of expanding storage capacity at nuclear power plants across America. Energy Department studies indicate that timely acceptance of spent fuel would represent direct and significant cost savings for operating reactors and those shut down prematurely.

We urge you to direct the Energy Department to proceed without delay to assess, define and implement the elements of an integrated waste management program, including a central, interim spent fuel storage facility and the infrastructure required to transport fuel from nuclear power plants to the facility beginning in 1998. If there is not sufficient authority under existing law for DOE to accomplish this initiative, Congress should provide DOE the authority to do so.

In developing an integrated system, it is of vital importance that DOE demonstrate continued progress in the scientific study of the Yucca Mountain site. To its credit, the department has restructured the Office of Civilian Radioactive Waste Management and the Yucca Mountain Project Office to enhance management of the project, and has streamlined its approach to site characterization at Yucca Mountain to meet current program milestones. It is absolutely essential that those milestones--submission of a license application in 2001, and start of operations in 2010--do not slip further.

While the federal government is responsible for siting appropriate locations for interim storage and disposal facilities, we believe that the construction and management of such facilities may benefit from additional private sector involvement. We want to be clear, however, that greater private sector involvement in any part of an integrated spent fuel management system in no way would relieve the federal government of its responsibility to safely and timely accept, manage and ultimately dispose of spent fuel.

Funding for an Integrated Spent Fuel Management Program

The industry is encouraged that both the administration and Congress have recognized that they must provide adequate funding for the high-level waste program. We commend members of the House and Senate for recognizing that funding for the DOE nuclear waste program has been restricted in past years and for increasing the allocation from the Nuclear Waste Fund for the program in fiscal year 1995. The nuclear industry stands ready to work with members of the conference committee on the Energy and Water Development Appropriations Act for the next fiscal year to resolve differences between the House and Senate funding levels.

Nuclear utility customers will have paid \$10 billion into the Nuclear Waste Fund by 1998. Yet about half the money is being used to offset the federal budget deficit while this program scrambles year after year for adequate funding.

In light of the more than \$4 billion current balance in the ratepayer financed fund, we believe it would be appropriate for Congress to consider exempting future funding of this project from the Budget Enforcement Act so that it does not adversely impact work on the detailed study of Yucca Mountain.

The Nuclear Waste Fund, unlike any other in the federal budget, collects money from utilities subject to contracts entered into between individual utilities and the Department of Energy that provide for specific services to be performed by the federal government. We believe a proposal could be crafted that would limit annual appropriations to the amount collected from utility customers into the Nuclear Waste Fund. Congress should, of course, continue to have oversight of appropriations from the Nuclear Waste Fund. Moreover, there should be no increase in the millage fee imposed on nuclear utility customers who contribute \$600 million annually to the Nuclear Waste Fund.

Compensation for Lack of Interim Storage by 1998.

In its Notice of Inquiry seeking comments on a strategy for interim storage of spent nuclear fuel beyond 1998, the Energy Department said it is exploring various options for interim storage and offsetting a portion of the cost to utilities for continued on-site storage.

As we have noted, we believe the government must accept its responsibility under the NWSA to develop and begin implementing a waste management system that is capable of removing spent fuel from nuclear plant sites beginning in 1998. The concept of compensating utilities has merit, but should be pursued at the appropriate time, that is, after an integrated management system has been defined. Our point should be clear, compensation alone does not in any way substitute for movement of spent fuel from utility sites to centralized, interim storage.

Conclusion

During the past 20 years, nuclear energy has demonstrated its ability to meet rapidly growing electricity demand in a manner that protects our environment and enhances our energy independence. Between 1973 and 1993, nuclear energy's share of U.S. electricity production has grown from four percent to 20 percent, and it has met 40 percent of the increase in demand for electricity. During that same period, nuclear power plants have reduced the cumulative amount of carbon dioxide emissions by 5.7 billion tons by substituting for fossil fuels in electricity generation. Nuclear energy has also reduced sulfur dioxide emissions by 48 million tons and nitrogen oxides by 20 million tons.

The chief byproduct of nuclear energy generation is spent nuclear fuel, but the volume is relatively low and the process to manage it is technically feasible. But the path to permanent disposal has been blocked by the lack of a realistic, integrated management system that allows us to take the steps needed to achieve the goal.

Congress must take action to facilitate the creation of such a system. Given that a national repository for spent nuclear fuel will not be operating until 2010 at the earliest, the Department of Energy should initiate immediately an integrated spent fuel management system that includes centralized, interim storage and timely completion of Yucca Mountain site characterization and licensing. Storing spent fuel indefinitely at nuclear power plant sites is not an acceptable solution, and it imposes unacceptably high costs. Conversely, centralized interim storage is cost effective and can be integrated into the existing DOE program for spent fuel disposal.

The federal government has a clear responsibility to begin accepting spent fuel starting in 1998, making prompt action on developing an integrated spent fuel management system imperative. There is a growing consensus among industry and state regulators that an integrated system is essential and that it must include centralized interim storage and continued work on the characterization of Yucca Mountain as a disposal facility.

The safe isolation of spent nuclear fuel is a critical environmental issue facing our nation. The United States simply must make progress in revolving this issue and the nuclear energy industry stands ready to continue work to achieve this result.

Mr. SHARP. Mr. Magavern?

STATEMENT OF BILL MAGAVERN

Mr. MAGAVERN. Mr. Chairman, thank you for inviting me to testify today.

My testimony represents the views of Public Citizen, but I also believe that it reflects the views of a majority of public interest groups that work on this issue and in fact I met last week with a number of both national and grassroots organizations to discuss this testimony.

I want to start out with what I think is probably the biggest underlying problem that is driving a lot of the different problems in the high-level waste area and that is that the political desire to move the irradiated fuel from its point of generation is taking precedence over protection of the public health and safety, sound fiscal management, and sensible energy policy.

We often hear from people advocating a solution to a radioactive waste crisis. These solutions often involve preempting the rights of States and citizens, burdening taxpayers with liabilities that should belong to industry or weakening health and safety standards, and the rationale for this often is, well, this generation has a moral responsibility not to push this problem off on to future generations.

Well, that sounds good but when you look at the problem I think as Professor Kai Erikson has pointed out in a book I would recommend called *The New Species of Trouble* that came out this year, he points out that rushing to bury nuclear waste doesn't take the problem off future Americans' hands so much as it takes the solution out of their hands.

I think that is where we are in danger of doing in the rush to quickly move and bury radioactive waste in the absence of any certainty that we can safely isolate it from the environment. During its very long hazardous life, unfortunately, the Department of Energy's program has not really improved much in the last year and a half on the mess that was bequeathed to this administration from its predecessors.

The solution that the Department presented earlier this year in its budget proposal was to spend more money and create essentially a nuclear entitlement which would evade congressional oversight and appropriate money directly out of the Waste Fund without going through congressional appropriations and I think that this is the kind of thing that makes citizens even more cynical about Washington when you take a program that has been, according to a number of independent critics, mismanaged and say the solution to that is, "We are going to spend more money."

Instead, I think we need more democracy and more public participation in the program and a number of the interested parties have criticized DOE's public participation policies and we have seen from the Department overall a willingness to come to grips with some of the problems it created in the past by, for example, opening files on radiation experiments, but what we have now is the Department proposing to move forward with a huge radiation experiment in Nevada and yet keeping that process much too closed to people that have a great concern with it.

So I think we need more democracy and apply this not just to the Department of Energy, but Congress and regulators and everybody else who has an interest in seeing movement in this program. If it remains undemocratic, then it is not going to be quick. It is not going to be cheap, and there is never going to be any kind of a consensus and you will see more delays, more litigation and obstruction and the kind of things that a lot of people have complained about here today.

Some of the points that I want to cover quickly: Our position on the local radioactive waste problem, first of all, we don't see any rationale for moving the waste to any sort of centralized interim facility. It creates a new dump which will cost more money. There is no substantive rationale for moving the waste from where it is now. It is merely a political rationale and I think it is essentially a NIMBY response.

The generators of the waste don't want to have to live with the waste that they are creating. They don't want it in their own backyards and they want to move it out of site, sweep it under the rug, so they can go on generating more of it and making the problem worse.

Therefore, we think the MRS should be reauthorized and the nuclear waste negotiator should not be reauthorized. I think we should put a halt to his traveling around the country peddling trash for cash to Native American tribes.

We also disagree with the recommendation of the NARUC dialogue that the Federal Government should on its own facilities establish storage sites. Again this is not a solution. This is just moving the problem.

There has been talk already about the need for an independent review and I would add that there have been a number of proposals for independent review from the Technical Review Board, from the GAO, from you, Chairman Sharp, and Chairman Lehman and from others in Congress, from public interest groups.

These proposed reviews will vary in their scope, but they have all one thing in common which is they have all been ignored by the Department of Energy.

I have yet to hear a clear rationale for why such a review could not be carried out. Again I think any changes in the law should increase congressional oversight and not decrease it. I think there have been too few hearings like this where Congress takes a hard look at the program, and I encourage further involvement.

Dr. Cantlon mentioned the problem of adequacy of funding and the Nuclear Trust Fund. I think this is a serious concern of all of ours. I think there are some misconceptions about the Fund.

I can certainly understand why the ratepayer advocates, utilities, their representatives are concerned that money is being paid into the Fund and yet we are not seeing much progress, but I find it odd that the proposed solution to that would be let's spend more money quickly when we are not spending it in the right way.

The danger is that we deplete the Fund and that when we really need the money to fund what we hope will be a permanent solution, that there won't be enough there and the taxpayers will be left holding the bag and if you go far enough in the future, you are

going to have a declining number of nuclear utilities, so the base for paying into the fund is going to get smaller and smaller.

I think Congress should rectify that by increasing the rate fund fee and indexing it for inflation to make sure that it is adequate.

We have recommended the Department of Energy conduct a programmatic environmental impact statement on its high-level waste management system because I don't think that there is anybody outside the Department who thinks that they have really seen the Department's whole plan for management of high level waste.

It needs to be laid out so that people can see it and comment on it. There will be adequate public participation and scrutiny and we can see how the different pieces fit together.

Another issue regarding the Nuclear Waste Fund is whether the money should be spent for on site storage and I think that under the current structure of the act, that is not an authorized use of waste fund money. If the Act is to be restructured and there is to be an acceptance that the waste will stay on site for a long period of time, then there probably should be some provision for funding that, but under the current structure again, that money is required for permanent solution and not for interim measures.

However, I disagree with the utilities and others who have filed the lawsuit who read the Act as indicating that the Federal Government has to take title to the waste in 1998. The Act, as I read it, says that the Government will take title in 1998 if a repository is available and since it clearly won't be, then those wastes remain the responsibility of their generators.

Regarding on-site storage, one of the real problems with that has been that casks have been licensed generically by the Nuclear Regulatory Commission so that citizens in those areas have been shut out of public hearings and there has not been adequate scrutiny of the safety and reliability of the casks that are being used for on site storage, and I think Congress should take look at that.

We are going to hear a lot of proposals, particularly next year, as Congress grapples with this more for weakening of environmental and licensing requirements for permanent repository and possibly for interim storage sites and we strongly oppose any weakening of those requirements and, in fact, as regards a private MRS, that facility, if it were to be built, which I think would not be a good idea, if it were, it should be subject to the high-level waste repository standards because there is a very good chance that if such a facility were ever built and waste were moved, that it would become a de facto permanent repository.

It is absolutely vital that sound science be exercised in this program instead of putting politics over science and I certainly commend the reports of the nuclear waste technical review board. I found them very useful.

I wish that the DOE and Congress would pay more attention to them and I also want to observe that the board is now down at least four members from its full membership and there have been no appointments coming from the administration. The administration probably could use some prodding from the Congress to make sure that technical review board is fully staffed because we need it at full strength.

I also think Congress should consider the environmental justice implications of the fact that every site that is currently being considered for a high-level radioactive waste dump is on or adjacent to Native American land, and I know that a lot of different tribes have a lot of different opinions on that, but I think as a country, we really have to take a look at what that means, that we seem to be targeting people who have already borne a lot of abuse from the government from the nuclear industry to be the main recipients of these highly toxic wastes. To me, that is not a good idea.

Finally, on the question of legislation, I have mixed feelings because, as my testimony has made clear, we do think there are a lot of ways in which the Act could be improved, but I am also concerned that if Congress does reopen the Act, that it will be seeking a quick fix that will end up being more costly, both in terms of dollars and in terms of public health and safety, and so I would urge Congress this time not to seek a quick fix, but to try to take a longer view.

Thank you.

Mr. SHARP. Thank you very much.

[The prepared statement of Mr. Magavern follows:]

STATEMENT OF
BILL MAGAVERN
DIRECTOR, CRITICAL MASS ENERGY PROJECT

Chairman Sharp, members of the subcommittee:

Thank you for inviting me to testify on the Department of Energy's high-level nuclear waste program. Although I speak for Public Citizen, where I direct the Critical Mass Energy Project, I believe that our views are consistent with those of a majority of the public interest groups who work on this issue, and I have discussed this testimony with a number of national and grassroots organizations.

Your letter inviting me to testify asked about our major concerns about the nation's public and private efforts to store and ultimately dispose of high-level nuclear waste. I will enumerate specific concerns, but I think that one overall factor underlies these problems. The political desire to find one or more dumping grounds for irradiated fuel is taking precedence over protection of public health and safety, sound fiscal management, and sensible energy policy.

The rationale that I often hear advanced by the advocates of the latest "solution" to the waste problem -- a solution that usually involves preempting the democratic rights of states and citizens, burdening the taxpayers with liabilities created by industry, or weakening health and safety standards -- is that "this generation has a moral obligation not to leave the problem to future generations." However, as Professor Kai Erikson has pointed out, "Rushing to bury nuclear waste doesn't take the problem off future Americans' hands so much as it takes the solution out of their hands."¹

The incontrovertible fact is that there is absolutely no way we can know, with any degree of precision, that we can safely isolate irradiated fuel for the span of its hazardous life. In fact, most governments in the world are allowing their high-level wastes to cool on the surface rather than burying them.² The U.S. would be better off admitting that we do not have a satisfactory answer and continuing research rather than rushing to irretrievably bury waste while major scientific questions remain unresolved.

Many nuclear utilities and governmental agencies are trying to create a "crisis" about the buildup of highly irradiated fuel at reactor sites. There is no doubt that these radioactive wastes are extremely toxic, and that their existence poses a long-lived threat to human health and the environment. However, oddly enough, those trying to create a crisis atmosphere have shown little inclination to curb the creation of the hazardous substances. Despite the fact that pollution prevention is by far the best means of environmental protection, these utilities and agencies actually are eager to dump their wastes precisely to facilitate the generation of more of the offending substance. They do not want to solve the problem, they just want to move it.

For now, irradiated fuel should remain the responsibility of the utilities that have generated it. Many of these utilities and their regulators are now engaged in frantic efforts to find some other entity to take their wastes off their hands and move them out of their sight. One example is the NARUC/utility proposal that the federal government take the wastes to one of its facilities. These initiatives have no substantive rationale. Dry-cask storage can move irradiated fuel out of the pools more rapidly than an off-site option could, and any system savings that could be achieved at a centralized facility could also be implemented at the reactor site.

Having responsibility for their own wastes also means the utilities should pay their own storage costs. The Nuclear Waste Fund was established to set aside money for a permanent repository, and it should not be siphoned off for other purposes. As DOE has recognized, the Nuclear Waste Policy Act does not create a statutory obligation to accept irradiated fuel in the absence of an operational repository. Therefore, the government has no obligation to fund utilities' waste storage. If waste generators use the multi-purpose canisters that DOE envisions, they should have to pay for them.

We strongly oppose the construction of a centralized Monitored Retrievable Storage (MRS) dump. Such a facility is unnecessary, costly, and provides no progress in the direction of finding a permanent solution to the nuclear waste problem. To my knowledge, every national environmental or consumer organization that has taken a position on the issue has opposed the MRS. The "Sustainable Energy Blueprint" which was endorsed by over 100 national, state and local business, environmental, and consumer organizations during the 1992-'93 presidential transition recommended that President Clinton leave vacant the position of Nuclear Waste Negotiator and reprogram DOE funds earmarked for promoting the MRS, spending the money instead on a White House Commission charged with a comprehensive reevaluation of U.S. radioactive waste policies.³

The only rationale for a centralized MRS is to allow nuclear utilities that have generated extremely toxic substances to move them far away, in hopes that they will be allowed to continue generating more and more of the same poisonous wastes. Relieving crowded fuel pools could be accomplished much more safely and quickly by dry-cask storage at the reactor site than by an MRS.

Building a centralized, away-from-reactor MRS to receive wastes from reactor sites would increase the risks to public health and the environment while also increasing costs unnecessarily. Shipping large quantities of irradiated fuel from points across the country to an MRS site raises serious concerns. Not only do transportation accidents pose the risk of radioactive contamination, injury and death, but even accident-free transport of highly radioactive materials poses public health risks due to the elevated radiation exposure received by those along transport routes.⁴

Federal regulation of the shipment of highly radioactive materials contains several weaknesses, including: inadequate cask standards; insufficient assurance that transportation casks actually meet those standards; and inadequate attention to the operational side of radioactive materials transport.⁵ If an MRS is put into operation, the amount of high-level waste being shipped will drastically increase, and Members of Congress can look forward to hearing an outcry from citizens who live near the transport routes.

Furthermore, once an MRS is sited, it would stand a strong chance of becoming a de facto permanent repository. Experience shows that high-level waste is very difficult to move, a fact which has impeded the search for a volunteer MRS host. In vetoing Fremont County's request for state permission for an MRS study grant, Wyoming Governor Mike Sullivan asked

"Can we and are we willing to trust the federal government's assurances that the MRS site will be temporary? Can we be paid enough or place enough trust to accept a permanent repository that was intended to be temporary? It is my belief we cannot."

Concern over MRS siting caused Congress last year to bar funding for further Phase II-B study grants to potential volunteer hosts. Congress should take the next step and put the entire MRS concept out of its misery by deauthorizing and defunding the DOE's MRS program.

The MRS that was such a bad idea when the federal government would have owned and operated it does not magically metamorphose into a brilliant solution when reconceived as a private facility. A private MRS would still impose unnecessary risks and costs on our society. Transportation risks would be especially high if the repository were in the Western U.S., since the vast majority of reactors are east of the Mississippi.

I urge Congress to make sure that any MRS-type facility, public or private, would have to comply with the Environmental Protection Agency's standards for high-level waste repositories. Furthermore, states should have the same veto power over private dumps as they do over public ones.

What Congress should definitely not do is to decouple MRS construction from the siting of the proposed repository. If the linkage is eliminated, the likelihood of the MRS becoming a de facto permanent repository will increase dramatically. The prohibition on siting an MRS in Nevada should also be maintained. In 1987, Congress passed "screw Nevada" legislation that unfairly singled out one state for site characterization, unwisely putting all the repository eggs in the Yucca Mountain basket. When it became clear that that site would probably not meet the EPA's standards for high-level waste, Congress returned to "screw Nevada" a second time by trying to weaken the standards. The ban on a Nevada MRS is the only remaining shred of the evenhandedness that marked the 1982 Nuclear Waste Policy Act. Its overturning would only deepen the prevailing belief that this nation's radioactive waste program has much more to do with political power plays than with the public health and safety.

Unfortunately, the Clinton Administration's radioactive waste policy has not improved on the mess bequeathed to it by its predecessors. Neither DOE's fiscal year 1995 budget proposal nor its "Proposed Program Approach" address the core problems with the high-level waste program. The American people are not going to be reassured when they find out that the federal government's cure for a program that is mismanaged and misguided is to throw more money at it by creating a nuclear entitlement as the administration proposed through moving the Nuclear Waste Fund partially off-budget.

As the Nuclear Waste Technical Review Board (NWTRB) has stated in response to the budget proposal, "simply increasing the program's budget will not solve the OCRWM's significant organizational and management problems, which continue to affect the technical program."⁶

The NWTRB has criticized DOE's civilian radioactive waste management program on several grounds.⁷ The NWTRB observed that the program is being driven by unrealistic deadlines that do not reflect a realistic assessment of technical requirements. Attempting to meet these unrealistic deadlines, the Board said, may force the DOE to make important technical decisions without first performing the appropriate technical and scientific analyses.

The NWTRB also noted the program's lack of an integrated waste management plan for transport, storage, and disposal of radioactive waste. The Board worried that "some crucial decisions may be made without an adequate technical evaluation of their impacts on other system components."

Thirdly, the NWTRB concluded that the program's "management problems seem to be adversely affecting some critical technical aspects of the program."

To address these problems, the Board recommended: a more flexible schedule, development of a comprehensive, well-integrated plan for the management of all high-level waste, and an independent evaluation of OCRWM's management and organizational structure. (The Board, by the way, now confronts the problem that the terms of some of its members have expired and new appointments have not been made. I urge the subcommittee to request the administration to fill those vacancies).

These recommendations should all be carried out before more money is thrown at Yucca Mountain. We agree with the assessment of the General Accounting Office in May of last year:

"In view of the current status of the disposal program, we recommend that the Congress defer consideration of legislation that would change how funds are provided to DOE from the Nuclear Waste Fund for use on the disposal program until (1) the Secretary of Energy has completed the review of the program that we recommended; (2) an independent review of the program, such as that recommended by the Nuclear Waste Technical Review Board, has been completed; and (3) appropriate legislative policy, and/or programmatic changes to the program have been implemented."⁸

I will not rehash the long list of technical problems with DOE's repository program, but I do want to raise one that I think has gotten insufficient attention. People sometimes forget that the proposed repository would hold defense wastes as well as commercial fuel; unfortunately, the two types of waste will not necessarily be suited to the same type of repository.

DOE's current plan is to store defense high-level wastes in a repository at Yucca Mountain in the form of vitrified borosilicate glass. However, vitrified glass can disintegrate rapidly in conditions like those at Yucca Mountain. Such disintegration could result in massive contamination of groundwater.⁹

Specific problems like that with defense wastes point to a larger failure -- DOE has not laid out for public scrutiny an entire schematic plan for management of high-level wastes. Therefore, we have recommended that DOE conduct a Programmatic Environmental Impact Statement (PEIS) in order to comply with the requirements of the National Environmental Policy Act (NEPA). A PEIS would allow interested parties to see and comment on the DOE's plans for storage, transport and disposal of irradiated fuel. DOE's plans for separate, piecemeal EIS's will not provide a basis for evaluating the whole high-level waste system, and may not be sufficient for NEPA compliance.

Instead of simply moving a portion of the high-level waste program off-budget and away from Congressional oversight, as DOE has proposed, Congress should take a number of steps to improve the program and strengthen the Nuclear Waste Fund. The civilian waste program should be subject to reauthorization every two or three years, to increase Congressional oversight.

While some seem eager to see the Waste Fund spent as soon as possible, such expenditures undermine the Fund's adequacy for its statutory purpose -- to ensure that the costs of waste disposal are borne by the waste generators.

The GAO has reported that, "Unless careful attention is given to its financial condition, the nuclear waste program is susceptible to future budget shortfalls," and has recommended that Congress amend the Nuclear Waste Policy Act to authorize the Secretary of Energy to automatically adjust the civilian nuclear waste disposal fee on the basis of an inflation index."¹⁰

Rather than waiting until the number of nuclear utilities has dwindled and the taxpayers are left holding the bag, Congress should increase the fee now and index it to inflation. The Department of Energy has opposed any increase in the fee, but the Chairman of the Senate Energy and Natural Resources Committee proposed inflation indexing last year as part of legislation to take the Waste Fund off budget. Adjustment of the fee for inflation is one of the recommendations of the **Sustainable Energy Budget**, which has been endorsed by dozens of business, environmental, consumer, religious and scientific organizations across the country.¹¹

Furthermore, the DOE's Office of Inspector General has reported its concern that some utilities might not be able to pay the hundreds of millions of dollars they owe the Waste Fund in one-time fees assessed for waste generated prior to April 7, 1983.¹² Since DOE has refused to follow the IG's recommendation that it take the necessary actions to ensure collection of these waste fees, Congress should require it to do so.

Finally, the IG also recommended that DOE give credits to the federal government for taxpayer-supported r&d that benefitted the Waste Fund.

The Department of Energy has made significant steps during the Clinton Administration toward emerging from its legacy, inherited from the Atomic Energy Commission, of Cold War secrecy and hostility to citizen participation. However, the high-level waste program still has a long way to go.

A draft report on public works and comments regarding the OCRWM program during the years 1989 to 1993 found that:

"low public trust and confidence is a general and recurring complaint against DOE. Yet, DOE's attempts to rectify the situation often fall short as the agency's information is often general, late, and of insufficient amount to be useful. In addition, although DOE remains committed to the peer review process for its documents, many reviewers have conflicts of interest which preclude neutral, objective reviews and which appear to stakeholders as attempts to bias the review process in DOE's favor...Public mistrust of DOE's nuclear waste storage program is sometimes rooted in irrational fear of unknown risk to health and safety, but more often reflects a rational understanding of the current state of scientific knowledge and of DOE's past history of covering up mistakes and censoring bad news." ¹³

The U.S. government and the nuclear industry have tended to exclude citizen participation and limit access to important information. The result has been deadlock. DOE, NRC and Congress try to force so-called "solutions" on unwilling communities, and those communities often rebel.

As long as the process continues to be undemocratic, it will also continue to be slow and expensive. The DOE and industry talk about public trust and acceptance, but their efforts to gain trust usually consist of public relations campaigns. Slick media tactics will not gain public confidence, particularly when the federal government is taking actions like the singling out of Nevada for site characterization and the undermining of safety standards for the proposed repository.

Trying to ram radioactive wastes down the throats of citizens and state, local and tribal governments is a prescription for more stalemate. Too often the concerns of these groups are written off as "NIMBY" and disregarded. In fact, the history of nuclear waste dumps, from Hanford and Savannah River to Maxey Flats and West Valley does not give people any kind of confidence that these highly hazardous wastes can, in fact, be isolated from the environment for a period of time that is far longer than human history.

One of the NWTRB's three major recommendations in its February 1994 letter is to "expand efforts to integrate stakeholder views." The Board supports integrating the views of the interested public into the program "while key decisions are being made, not afterward."

In order to bring more democracy into the process, DOE and NRC should commit to making all relevant information publicly available in usable form. Furthermore, citizen groups should receive funding to participate in oversight, so that their members do not have to spend their personal savings and grocery money to attend conferences and meetings. Finally, Congress should add a citizen suit provision to the Atomic Energy Act, similar to the provisions in most major environmental statutes (Clean Air Act, Clean Water Act, etc). These provisions allow citizens to act as private attorneys general and aid in enforcement.

One of the ways in which citizens and state and local governments have been cut out of the decisionmaking process on high-level waste is through generic licensing procedures adopted by the NRC.

At the Palisades reactor in Michigan, citizens groups are challenging the storage of high-level waste in untested concrete casks. Michigan Attorney General Frank Kelley has joined the citizens in calling for a public hearing on the project. However, the NRC has refused to hold a hearing, having approved the VSC-24 casks under a generic ruling. The Michigan citizens have found several instances of site-specific issues that can not be addressed generically, along with several examples of NRC violating its own rules.¹⁴

Rather than rushing to dump wastes, many national and local organizations and officials have recommended that the U.S. step back and take a new look at its radioactive waste problem through an independent review. In addition, review of the high-level waste program specifically has been proposed by the Nuclear Waste Technical Review Board, the General Accounting Office, and by you, Mr. Chairman, along with Chairman Lehman. These review proposals differ in their scope, but they all have one thing in common -- they have all been ignored by the DOE. The only independent review proposed by the Department is limited to financial matters, and that evaluation has yet to get off the ground.

As a group of Senators and Representatives have recommended, President Clinton should appoint "a Presidential Commission to perform an independent review of our nation's needs, policies, and programs" on nuclear waste. The Congressional letter points out that:

"Nuclear waste in this country has historically been addressed not based on its hazardous nature or length of life, but by other, non-scientific delineations, such as the source of waste. Thus, our nuclear waste programs deal with waste issues in a piecemeal fashion, not in the integrated and presumably safer and more cost-effective manner that would be preferable."¹⁵

These members of Congress have called for an open, public review by a commission that includes representatives of affected interests. The commission would hold extensive public hearings and issue a comprehensive report with evaluations of current programs and recommendations for change. This proposal is supported by a broad array of national and local citizens groups.

In addition, the NWTRB has recently reiterated its own call for an independent program review "sooner, rather than later." The Board asserted that its recommendation takes on even greater significance in light of DOE's request for a special funding mechanism to sharply increase OCRWM spending.

The Department of Energy, finding itself deep in a hole, has elected to keep digging -- literally. Confronted with the fact that its program is filled with serious flaws, DOE has chosen to throw money at the problem, and Congress is going along. I can think of no better example of why so many Americans have become cynical about the federal government.

As my testimony has made clear, we do believe that legislation is needed to correct a number of deficiencies in current law. However, we also see a danger that new legislation will lead to quick fixes that will make the situation worse rather than better. We will certainly oppose efforts to weaken environmental and licensing standards, as Congress tried to do in 1992, or attempts to preempt the authority of state and local governments in this area. The result of such legislation would not be to resolve current problems, but to exacerbate them and to further erode what little public confidence remains in the government's ability to handle radioactive wastes.

I also wonder whether this Congress has given much consideration to the fact that every single proposed site for high-level commercial radioactive waste is on or adjacent to Native American land. The Western Shoshone claim that a nuclear waste repository at Yucca Mountain would violate the Treaty of Ruby Valley.¹⁶ The Nuclear Waste Negotiator travels the Western U.S. peddling his trash-for-cash deals to tribal councils. And, of course, the Mescalero Apache leaders, becoming disenchanted with the Negotiator and the DOE, are now negotiating directly with the waste generators. What does it say about this country that the citizens targeted to receive the poisons produced by our biggest technological failure are the same people who have already suffered enormously from the abuse of our government and industry? I hope some Members of Congress will consider that.

1. Kai Erikson, A New Species of Trouble (W.W. Norton & Company: New York, 1994), p.225.
2. Ibid, p.204.
3. A Sustainable Energy Blueprint, Public Citizen et al., pp. 21-23 (Washington: 1993).
4. Nuclear Legacy, p.VIII-1.
5. Ibid, p.VIII-4.
6. Nuclear Waste Technical Review Board, "Letter to Congress and the Secretary of Energy," February 1994.
7. "NWTRB Special Report to Congress and the Secretary of Energy," Nuclear Waste Technical Review Board, March 1993.
8. GAO/RCED-93-124, p.48.
9. Arjun Makhijani, "Glass in the Rocks: Some Issues Concerning the Disposal of Radioactive Borosilicate Glass in a Yucca Mountain Repository," prepared for the State of Nevada, January 29, 1991.
10. GAO/RCED-90-65, pp. 2,4.
11. "Sustainable Energy Budget for the U.S. Department of Energy, Fiscal Year 1995," p.75.
12. DOE/IG-0280, March 26, 1990.
13. "Report on Selected Published Works and Written Comments Regarding the Office of Civilian Radioactive Waste Management Program, 1989-1993, Prepared for Secretary Hazel O'Leary, U.S. DOE, Washington, D.C., by Dr. James A. Thurber, Center for Congressional and Presidential Studies, School of Public Affairs, The American University, March 1 1994.
14. Statement by Mary P. Sinclair, PhD, National Energy Policy Committee, Sierra Club, Co-Chair, Don't Waste Michigan, Nuclear Waste Technical Review Board Meeting, Nov. 1-2, 1993, Dallas, TX.
15. Letter to President Clinton from 12 senators, March 15, 1994.
16. Memorandum from Ian D. Zabarate, Manager WSNC-Nuclear Waste Program, regarding Native American Sovereignty and Nuclear Waste Issues, May 16, 1994.

Mr. SHARP. Dr. Cantlon, let me just first make a comment to you. I appreciate the work of the board and don't need to remind you, but I do think it is important to keep in the record of the debate the function that we intended for you folks because our colleagues from Nevada, who I meant to ask about their view of the board—and we can seek that in other ways—I am not aware of any serious criticism of the board as inadequate to the task.

I understand we are dealing right now with the question of personnel and Mr. Magavern is correct that you need the appointments, but you also need the ability to hire technical personnel and we hope in the other conference on the Department of Defense to at least help resolve that issue, but I just want to, more for the record and for the public debate, remind people that in 1987 when the determination was made that we were not going to be successful politically at characterizing sites all around the country, and we also had come to the painful recognition that characterization was going to be dramatically more expensive than anybody had ever envisioned when they started out in the notion of having one Western and one Eastern site and doing 10 preliminaries in the East and three preliminaries in the West and whatnot, and it narrowed down to Nevada.

There is no question that it was fundamentally a political decision to narrow down to Nevada, although it also was true at the time that the scientific characterization and the data indicated it was most likely a prominent site. But recognizing the legitimate interests of the people of Nevada, and more broadly our national interests in making sure we were doing a true scientific characterization and not just ducking that responsibility, we set your board up as an independent voice to the Department and to Congress and to the public on the various scientific issues. As people will recall, intense issues were raised in Texas, in the State of Washington, in the State of Nevada, and arguments over whether the science was being perverted and the studies were being perverted and everything was for politics and we were never going to have any honest scientific examination, even though we still have the Nuclear Regulatory Commission that has to approve all this in the end—none of us were frankly able to sort that out.

Most of us in the Congress are not technically competent to deal with those issues, and we really have no business as public policy trying to make final judgments on unbelievably complex scientific questions, but we knew there needed to be more of an independent authority that people could look to for honesty and integrity.

So I just want to confirm that with you and your board and others in this debate, and if the people of Nevada who are objecting—although not everybody, I should say, in Nevada is objecting—but this is the outlet for the real focus on the science because you are there to blow the whistle for us and for the public if, in fact, the Department is not adequately approaching the characterization on a scientific basis. So I just want to seize this opportunity to reinforce that role, and that part of the decision made to narrow the focus on Nevada was to recognize there also was an honest complaint that we had to be more true to the science and that function would then be put with you.

Let me turn to the issue that I raised at the previous panel on the costs of dry cask. Mr. Skinner, I don't know if you have this data with you or if it has been developed, but I think it would be useful for us to try to put together a good analysis, unless it exists and I am not aware of it, of some of these potential costs on the interim storage, potential cost on the dry cask, what it is for the life cycle, you know, roughly for plants.

It varies obviously for each plant, but if you have some of that you want to share with us now, a perspective on these costs, because I think the next Congress needs to be grounded in the costs because the arguments will be made as to which is cheaper and that will affect people, I think, the larger question may be the NIMBY problem.

Mr. SKINNER. Well, Mr. Chairman, I think that—I asked, in fact, an earlier question trying to quantify it myself, and it varies from plant to plant, from site to site, from company to company, and it all depends on the assumptions that you make, if you are going to make some long-term assumptions.

If you have to store it to 2010, it is one thing. If you are going to have to store it beyond that, if the 2010 date is unrealistic, there is another. Part of it is the reracking of your spent fuel pools, but—so what I think I would like to do is ask the NEI staff to begin to quantify that over the next several weeks on a utility-by-utility basis because we have it based on certain assumptions. They have it, we are going to have to make certain assumptions on the cask, dry cask storage system that is used, but obviously the Northern States Power and other companies that are well along have a better estimate than some of those that haven't really had to face it yet.

We will try to get you our best estimate shortly.

Mr. SHARP. I appreciate that.

I don't know that—I mean, cost is not the only factor and value that people are going to be interested in in making these decisions, but we have already had claims and counterclaims as to what is the cheap route to go and the hope to get a cheaper route, and I might say that in 1987 when we did have an independent commission—it is always a question how independent these things are—when we had a commission examine the question of an MRS, I am told that their conclusion basically was that there was not any particular fiscal or management value to the current proposals or the few proposals on the table, those things change, and just again as a part of the public debate, and my recollection, which may be faulty, is that the reason Mr. Dreyfus indicated the law does not allow them to pursue interim storage proposals at this point, and part of that, of course, was the response to parochial concerns of the targeted or those who thought they were in the cross hairs of the Department of Energy at the time. But a part of it was clearly the argument that my colleague who has left and is intensely interested in this and we are keeping the record open so that further testimony, I should say at this point, can be provided to the record, but part of what he was saying is he wants to keep the eye on the ball is the original goal of the deep geologic disposal, and interim storage many felt was likely to either drain off the resources and slow that process down or simply the policy would naturally be

abandoned over time and you would waste resources. That is a tough conundrum, I mean, now, a number of the same people that advocated that are now saying we should switch policies.

I don't know what if you want to comment on the interim storage question.

Mr. SKINNER. I do believe we really need to focus on the number one issue, which is long-term safe storage. Costs are important, and obviously they are going to be analyzed, but when we talk about the proliferation of site storage, especially when the spent fuel pools are full to 56 facilities by the year 2010, that is clear to me that is a safety issue, and a concentrated secure facility at one location is obviously clear.

When we talked about an interim storage facility, one of the reasons and the timetable that was being looked at was that we would have a permanent repository available by 1998 or slightly thereafter. We are now looking at 2010 and the final review is not over yet, and there are some people in the industry who think that even that date will slip, so the thing that was driving the permanent repository by 1998 and therefore no need for a short-term interim storage facility is now gone.

We have already lost 12 years. We may take longer than that.

I must say I was disturbed to hear that a retrievable storage site would take 8 years to site if we had everything from the go today. The Mescalero solution, I understand, is substantially less than that if no lawsuits got in the way, but we already have a huge problem, and it is getting bigger and bigger and bigger and longer and longer, so I think the time to review the interim solution is really driven by the fact that the program has not been able to meet—the only milestone of any significance the program has met under all administrations is they met the milestone of putting out the rules and regulations so they could collect the money.

They have that one right, and they have been doing that for an extended period of time. But all the others seem to be slip, slip, slip, slip, slip, and I think that is what is driving a centralized interim storage facility, but we will get the costs on it and the industry feels, as I have indicated, that we have adopted a number of plans, but it is not just money.

We in the industry believe that the long-term best solution for this country is a centralized, safe facility that is all encompassing and all inclusive.

Mr. SHARP. I can't resist trivializing our conversation because the most efficient thing the District of Columbia Government does is to ticket your car, boot it. They are even very good about taking the boot off within an hour and a half.

Mr. SKINNER. Some things never change.

Mr. SHARP. It is their means of collecting funds and they do it extremely well.

Mr. SKINNER. We don't know where they go, but they certainly—it goes in. The output is some question.

Mr. SHARP. Mr. Magavern, I realize that you were speaking primarily for Public Citizen, but also there are a wide group of collection organizations that you often work with and you have consulted with.

Have you or they come to a view as to what should be the waste policy over the next 10 to 20 years? I mean, where should we keep it focused? Should we keep it on track under the deep geologic, which I believe the national environmental community originally strongly supported that idea, or should we keep it on site or have you folks come to any conclusion on that?

Mr. MAGAVERN. Well, as for where it should be during the interim period of 10 or 20 years, I would say there is a pretty strong consensus that it should stay on site. As for the ultimate destination, I believe you are correct that—1982 was before my time here in DC., but I think that you are right that at that time most of the national environmental groups were supporting deep geologic disposal, and I think that consensus has really fallen apart.

There has been a major change there, and there is no longer environmental support for deep geologic. I think that a lot of us feel that we really don't know what is the best thing to do with these incredibly hazardous long lived wastes, and that it would be somewhat arrogant of us to think that we can predict that in 10,000 years there will have been no human intrusion or groundwater leakage or volcanic eruption, seismic activity, all the things that are potential with Yucca Mountain and probably with other sites, and so the people are much more likely now to say let's keep it where it is for now, as unsatisfactory as that is, and not cut short the research, but continue to look into ways that we can handle it in the long term, and that is much more similar to what other countries around the world are doing.

Mr. SHARP. Let me ask you if you people have come to a conclusion or have advice for the Congress on the question of monitored retrieval storage at this point? In this regard, clearly at some point—there is an argument over at what point—but we do have nuclear plants that are not going to be operating. We already have that case, so we are going to increasingly have situations where we have pools in existence and my impression—and I will let Dr. Cantlon or others correct me if I am wrong—is that the dry cask storage may well be a safer alternative to keeping it in the pools, and therefore some actions are going to have to occur.

I mean, just being as it is either the pools fill up or the—what I believe you indicated, but I am not sure that you people opposed any kind of above-ground central storage as well, and I wasn't clear on that at this point, I mean, whether you really believe you can keep both just the quantity and the quality of it at the reactor sites or whether we need to turn to a policy, perhaps not yet—you may argue the timetable on this too, but where we are going to have at least some centralized facility and Lord knows where we will put it, but Yucca Mountain comes to some people's minds, just as Hanford, Savannah River, and Idaho, one can name a handful of places in the country, where the Federal sites already exist.

Mr. MAGAVERN. Being able to monitor and retrieve are definitely advantages. Those can be done on site, and I think that you are right that dry cask storage is less unsafe than keeping it in the pools.

We don't see any advantages to moving the waste off site, and we see a number of disadvantages, the risk of accident in transportation being one of them, and therefore keeping the waste on the



site, but in a situation where it can be monitored and retrieved is probably the least bad response to a completely unsatisfactory situation.

Mr. SHARP. Dr. Cantlon, maybe I should let you into this question of safety a bit whether you would agree with the general characterization I made about the pools and the dry cask and what you—

Mr. CANTLON. I don't recall that the board has looked technically at that question, but from the discussions that we have had with people both here and overseas, I think both wet storage, storage pools and dry storage can be made quite safe. The difficulty is that the engineering challenges of keeping wet storage safe are more demanding, and the kinds of things that can happen in wet storage are a little bit more difficult to do, but I think both wet storage and dry storage can be made safe. The difficulty is for how long, and at what cost.

Mr. SHARP. One of our colleagues in Congress was testifying about how dangerous this facility would be in Nevada and that of course is a public perception of these facilities, but I am struck by the fact that, Mr. Magavern, your organization and many others, and certainly not you folks alone, that it obviously is not for you so severe that we can't keep it on site around cities very close to all kinds of facilities, underground aquifers, all of the kinds of things that we fear might go wrong in Nevada or people would fear in Nevada on the Yucca Mountain are certainly available and prevalent at the sites we have.

Now obviously the difference is once we put it deep down in and we seal it up, we are planning to leave it there for a thousand years, without doing that, but I keep trying in my own mind to get a perspective on just how dangerous is this, and maybe it is simpler than we all think sometimes, but I don't mean to put that question to you, but do you have a comment, Mr. Magavern?

Mr. MAGAVERN. Yes, I certainly do. One is you come back to the concept of being able to monitor and retrieve, which is essential. If you look at it, a lot of the potential problems with Yucca Mountain is not so much what people are afraid will happen in the next 10 or 20 years, but it is more 50, 100, 1,000, 10,000 years; and secondly, I would go a step further and talk about the risk, not just of the waste that is at the reactor sites, but about the operating reactor itself, and to talk about the concerns of having the waste be in a populated area and near water sources, well, that doesn't sound like a great place to put a nuclear reactor, but that is what we have done, and, in fact, the risks of an operating reactor in my opinion dominate the risk of the waste that has been taken out of the reactor and is being stored there.

I wouldn't treat either of them lightly, but the decision to create these dozens of high-level waste sites across the country was made when those reactors started up, and that is irretrievable now.

Mr. SHARP. That is where we kind of are. We have to solve the problem. We have the waste there and no matter what else we do—and obviously it seems apparent that if there are no power plants sited, the rules require a quite different approach to siting than would be the case—they wouldn't all be around Chicago for Mr. Skinner to deal with.

Mr. Skinner, do you have a comment?

Mr. SKINNER. Well, I think that like it or not, we have these facilities. As you said, Mr. Chairman, we have the problem, and now the question is what is the safest way to deal with the problem on a long term basis, and it isn't a matter of—there are plans under way to decommission, we are funding for decommissioning, we are learning more every day about what it takes to decommission.

There is no question that this country has to deal with not only our spent fuel, the civilian spent fuel, but also weapons grade fuel, and we have got to deal with it, and it has got to be done in a way that is thoughtful, and there is just no way long term to put aside the money that I can conceive that you don't have a greater risk when you have 56 or 66 or 80 facilities, each of which is exposed, to one facility, and so therefore properly done, properly protected, we believe a central facility is the best way to ensure that this part of the nuclear safety issue is taken care of.

Mr. SHARP. Well, gentlemen, I want to thank you. We could probably go on. I might find myself without lunch harder to think as well, but we will keep our record open for a number of additional testimonies as well as there might be some questions, and we appreciate your time and your attention to this matter.

Thank you very much.

[Whereupon, at 1:24 p.m., the hearing was adjourned.]

[The following material was received for the record:]

STATEMENT OF CHESTER RICHARDSON, GOVERNMENT AFFAIRS, AFRICAN-AMERICAN
ENERGY AWARENESS COUNCIL

Chairman Sharp, members of the committee, I am the Rev. Chester Richardson and I am appearing before you today as a member of the African Americans in favor of Yucca Mountain Studies.

I'd like to thank the committee for allowing me to provide testimony on such short notice. Unfortunately, it is something that I'm becoming accustomed to. It seems as though when people want to talk about nuclear waste, and how our Nation is going to provide for its long-term storage, the folks in Nevada—an important stakeholder group by any measure—are frequently left out.

There is the unfortunate assumption that everyone in our State is against the Yucca Mountain Repository. That is not true.

The voice of Nevadans is sometimes not heard because people seem content listening to some of our elected officials and the people they appoint to run State agencies. These politicians have a political agenda to oppose the repository project. In a small State like ours, these few individuals have a lot of power and when they speak in one voice it does appear to suggest that their message is the message of all Nevadans.

When the non-elected Nevadans get a chance to talk, such as you have allowed me today, we have a different message. Our message is let the study of Yucca Mountain take place in order to make an educated decision about the site. We want this study to answer our most important question, whether or not a repository can be safely built and operated without causing harm to Nevadans. Until the study is complete, we cannot make an informed decision about the safety of the site.

While the scientists are answering the questions of safety, and the characterization of the mountain continues, Nevadans should be able to negotiate for benefits as spelled out in the revised Nuclear Waste Policy Act.

This is the message of the man on the streets. We understand there is a Federal law requiring DOE to study Yucca Mountain. We are aware of the constant fight our elected officials have waged and the numerous defeats our State has received in the courts.

To us average fellows, it doesn't make sense to continue this fight. It doesn't make sense for our elected officials to cry for new projects to supplement the Nevada test site's mission, and in the same breath say they don't want Yucca Mountain. It doesn't make sense that our politicians are unwilling to sit down and talk about benefits for their constituents.

I may be the only person here today who freely admits that I have a special interest in the Yucca Mountain project. My special interest is to tell everyone who will listen that I want to secure benefits for Southern Nevada and particularly my community which is suffering an economic blight.

Nevadans understand there is a Federal law that requires the study of Yucca Mountain. We also understand that this law provides an avenue for benefit negotiations for our State. It's precisely why more and more Nevadans are wondering how come our elected officials aren't taking a more constructive approach to this project.

For too long, our politicians have taken the position that benefits aren't available. How do they know? They've never asked!

In closing, let me say that because of the activities at the Nevada test site we have a long and proud nuclear legacy in our State. The test site has made a tremendous economic impact for my community. We believe that if it is scientifically proven safe, Yucca Mountain can be another important economic and technological mecca for Nevada.

Rather than criticizing, we need to be analyzing the possibilities of the Yucca Mountain project. That is our message and we will continue to deliver it whenever we can. All we can hope for is that people will begin to hear what we're saying and asking for, and begin to include us in the discussions. Thank you for this opportunity.



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